Lab: Getting Started with Apache Cassandra / Astra DataStax

Introduction

In today's fast-paced digital landscape, the need for robust, scalable, and reliable databases is more critical than ever. Whether you're developing a new application or scaling an existing one, choosing the right database technology is a decision that can significantly impact your project's success. Enter **DataStax Astra**, a fully managed, serverless database-as-a-service (DBaaS) powered by Apache Cassandra® --- one of the most resilient NoSQL databases in the industry.

Why Choose Astra?

DataStax Astra makes it incredibly easy to harness the power of Apache Cassandra without the overhead of managing the underlying infrastructure. Here are some compelling reasons to consider Astra for your next project:
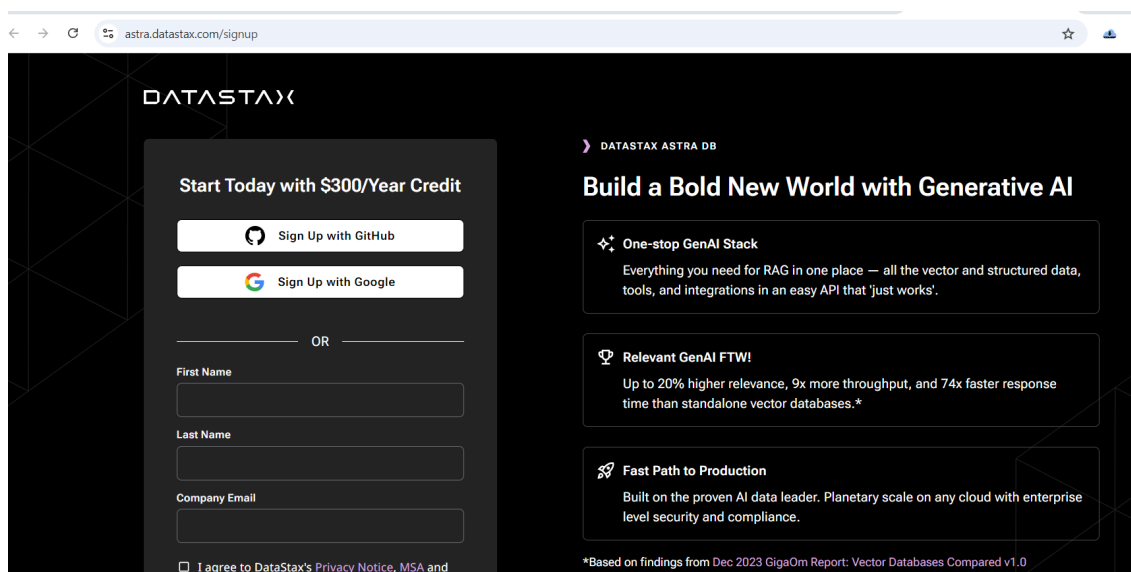
- **10 GB Free, No Credit Card Needed**: You can get started with Astra in minutes, and with 10 GB of free storage, there's no risk and no upfront cost.
- **Built on Apache Cassandra**: Astra is built on the same open-source Apache Cassandra® that powers some of the world's most demanding applications, ensuring you get proven, enterprise-level performance.
- **Serverless and Scalable**: Astra eliminates the need to install, manage, and scale Cassandra instances. Its serverless architecture means it automatically scales up or down based on your workload, with no need for manual intervention.
- **Enterprise-Level Security and Reliability**: With enterprise-grade security and management features, Astra ensures your data is safe, available, and performant, no matter the scale.
- **Multi-Cloud Flexibility**: Deploy Astra on your preferred cloud provider, whether it's AWS, Google Cloud, or Microsoft Azure, and leverage a geographically distributed architecture.

Getting Started with Astra DB in 10 Minutes

Step 1: Sign Up for Astra

To begin your journey with Astra, visit the [Astra registration page](). You can sign up using your email, Google, or GitHub account. No credit card is required, and you'll receive 10 GB of free storage to start building and testing your applications right away.

Signup URL: `https://astra.datastax.com/register`

DATASTAX

Terms and Policies

Signing up for a DataStax account gives you access to multiple products and services. In order to have an account with us, we require you read through and accept the following terms and policies:

1. DataStax MSA
2. Astra Supplement
3. Website Terms and Service
4. Privacy Notice
5. Preview Terms

☐ I have read and agree to the above terms.

Decline   Accept

Knowing you better will help us improve your experience.

How do you plan to use Astra?

Work   Personal   Both

How would you describe your role?

App Developer   AI Engineer   ML Engineer   Data Engineer   Cloud Engineer

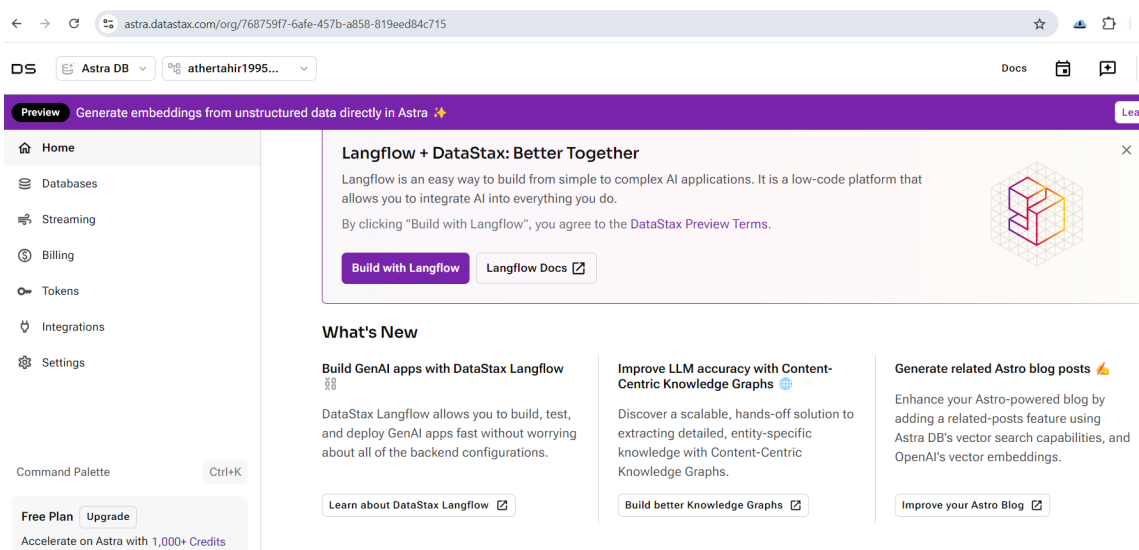Architect   Manager/Director   CTO/VP   Student or Learner   Other

What is your primary programming language?

Python   JS JavaScript/TypeScript   Java   GO Go   php PHP

Other   I don't code

How did you hear about Astra?

Google/Search   Blog/Tech Article   LinkedIn   Referred by someone   Twitter/X

YouTube   Partner/Integration   Workshop   Event/Conference   Other
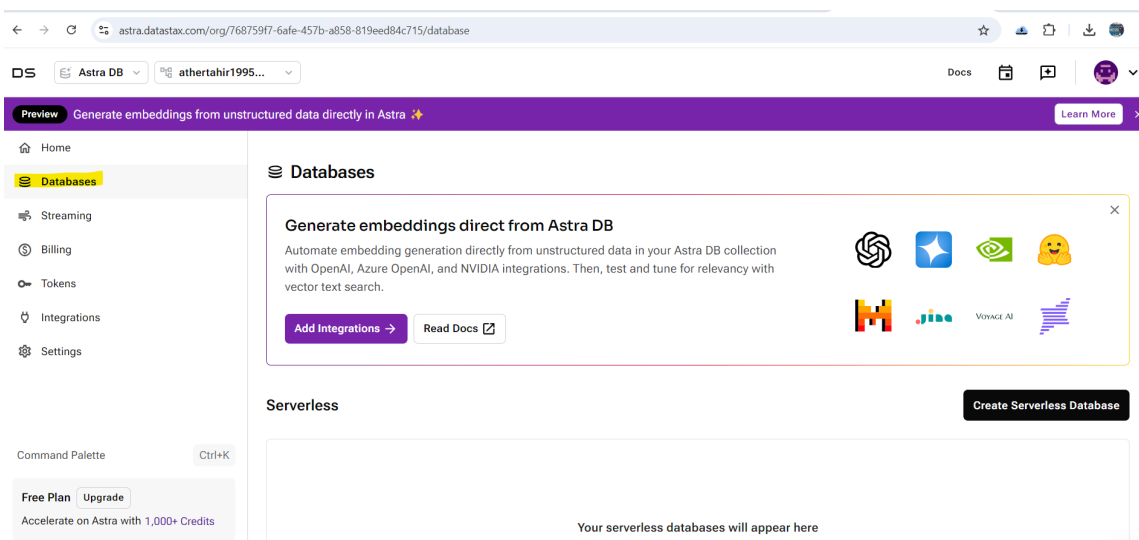
Continue to Astra →

Step 2: Explore the Database Options

Astra offers two types of serverless databases:

- **Serverless (Vector)**: Ideal for vector search applications, such as those used in Generative AI (GenAI), semantic search, and geospatial search. These databases can store vector embeddings alongside non-vector tabular data, making them perfect for applications requiring complex data retrieval, such as chatbots and sentiment analysis.
- **Serverless (Non-Vector)**: Designed for more generic applications, like content management, user authentication, and transactional applications. These databases provide the performance and reliability of Cassandra for a wide range of traditional workloads.

Select **Databases**:

Create Database

ESC ✕

Select a deployment type

Serverless (Vector)   Recommended

An all-in-one database solution, optimized for Vector and Generative AI workloads

Serverless (Non-Vector)

A more traditional database solution without any of our new vector capabilities

Configuration

Database name*

> db_name

Give it a memorable name – this can't be changed later.

Provider*

> aws Amazon Web Services ⌄

Region*

> 🇺🇸 us-east-2 ⌄

Cancel   **Create Database**

Step 3: Understand the Terminology

Depending on your background, you might be familiar with various terms for database components. Astra uses specific terms that may differ based on the database type:

- **Namespace (Vector) / Keyspace (Non-Vector)**: A container for collections or tables within a database.
- **Collection (Vector) / Table (Non-Vector)**: A container for data.
- **Document (Vector) / Row (Non-Vector)**: A piece of data stored within a collection or table.
- **Field (Vector) / Column (Non-Vector)**: Attributes of the data, such as vector dimensions or IDs.

Understanding these terms will help you navigate Astra's interface and API more effectively.

Step 4: Choose Your Cloud Provider

Astra supports multiple regions across Amazon Web Services, Google Cloud, and Microsoft Azure. Depending on your location and needs, you can deploy your database in a region that best suits your requirements. Astra ensures high availability and low latency by allowing you to choose from a wide range of regions, with different pricing options depending on the region and provider.

Provider*

Google Cloud ^

Google Cloud		1 available region
aws Amazon Web Services		1 available region, 2 locked
A Microsoft Azure		1 locked region

Conclusion

With DataStax Astra, getting started with Apache Cassandra has never been easier. Whether you're developing cutting-edge AI applications or managing traditional transactional workloads, Astra provides a powerful, flexible, and easy-to-use platform to build your database solutions. Best of all, you can explore all of this with a free tier that gives you 10 GB of storage at no cost --- perfect for getting up and running quickly.