Deployment of Blog Website on AWS using Elastic Beanstalk

Introduction

The project titled "Deployment of Blog Website on AWS using Elastic Beanstalk" is a comprehensive web application designed to streamline the creation, management, and viewing of blog posts. Leveraging technologies like Node.js, Express.js, MongoDB for backend development, and HTML, CSS, and JavaScript with the EJS templating engine for the frontend, the application offers a seamless user experience.

Key features of the application include secure user authentication, enabling users to register, log in, and log out safely. Registered users can create and delete their blog posts, complete with titles, body text, and optional cover images. The homepage showcases all blog posts in a visually appealing grid layout, allowing users to explore content effortlessly.

Under the hood, the backend architecture includes routes and controllers for managing user authentication and blog post operations, with user passwords securely hashed using salt and stored in the MongoDB database for enhanced security.

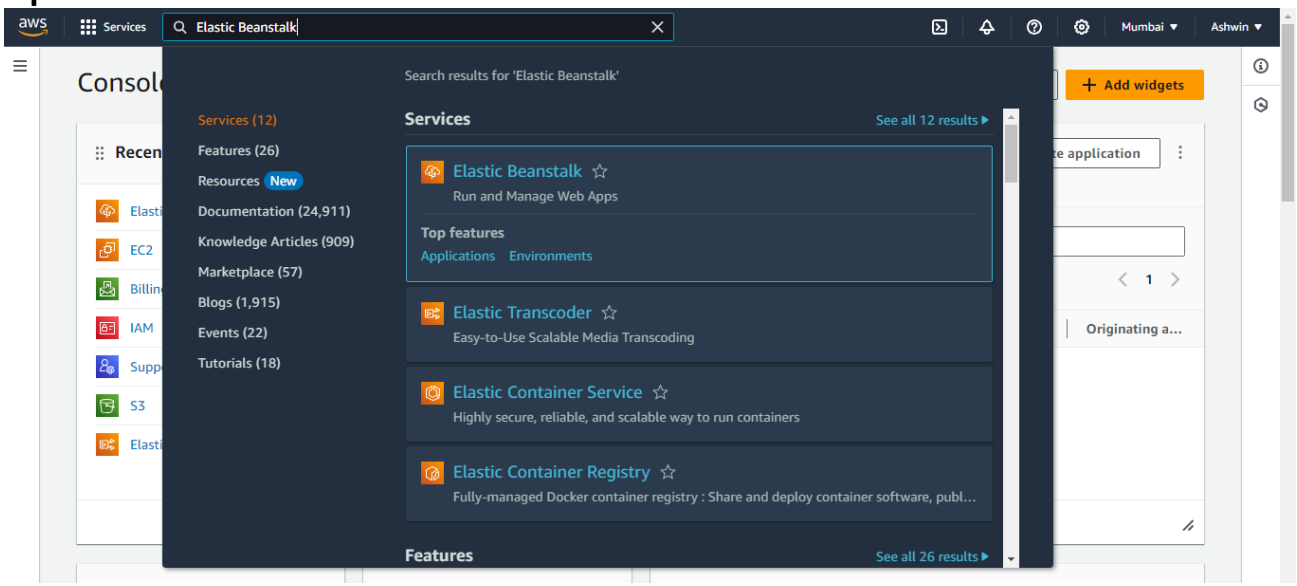
Deployment of the application is orchestrated through AWS Elastic Beanstalk, offering scalability and reliability in hosting web applications. Elastic Beanstalk is a Platform-as-a-Service (PaaS) offering that abstracts away much of the underlying infrastructure management, allowing developers to focus on writing code and building their applications rather than worrying about server provisioning, configuration, and scaling. The MongoDB database is deployed on MongoDB Cloud, with communication facilitated through environment variables configured in Elastic Beanstalk.

In essence, the "Deployment of Blog Website on AWS using Elastic Beanstalk" project exemplifies the development and deployment of a full-stack web application, showcasing the integration of diverse technologies to deliver a robust and user-friendly blogging platform.

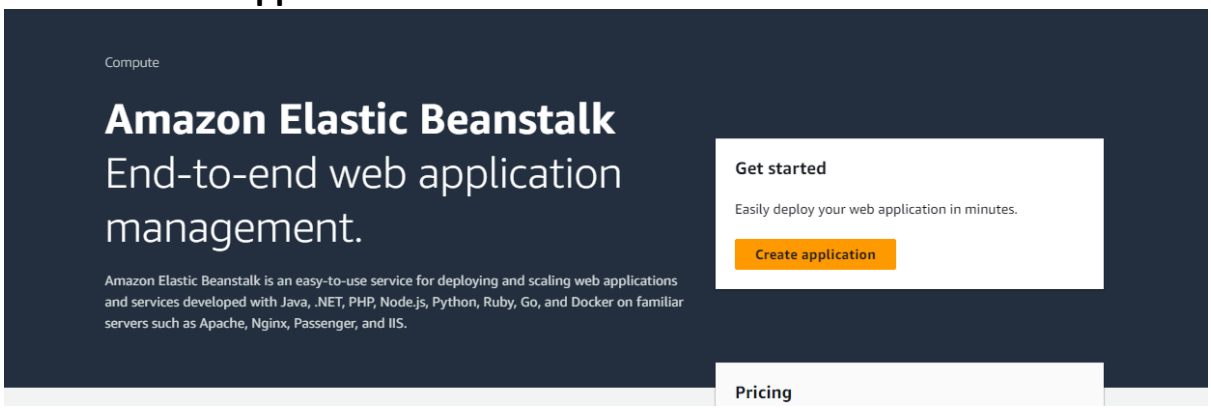
Deployment of the project

To create your example application, you'll use the Create application console wizard. It creates an Elastic Beanstalk application and launches an environment within it. An environment is the collection of AWS resources required to run your application code.

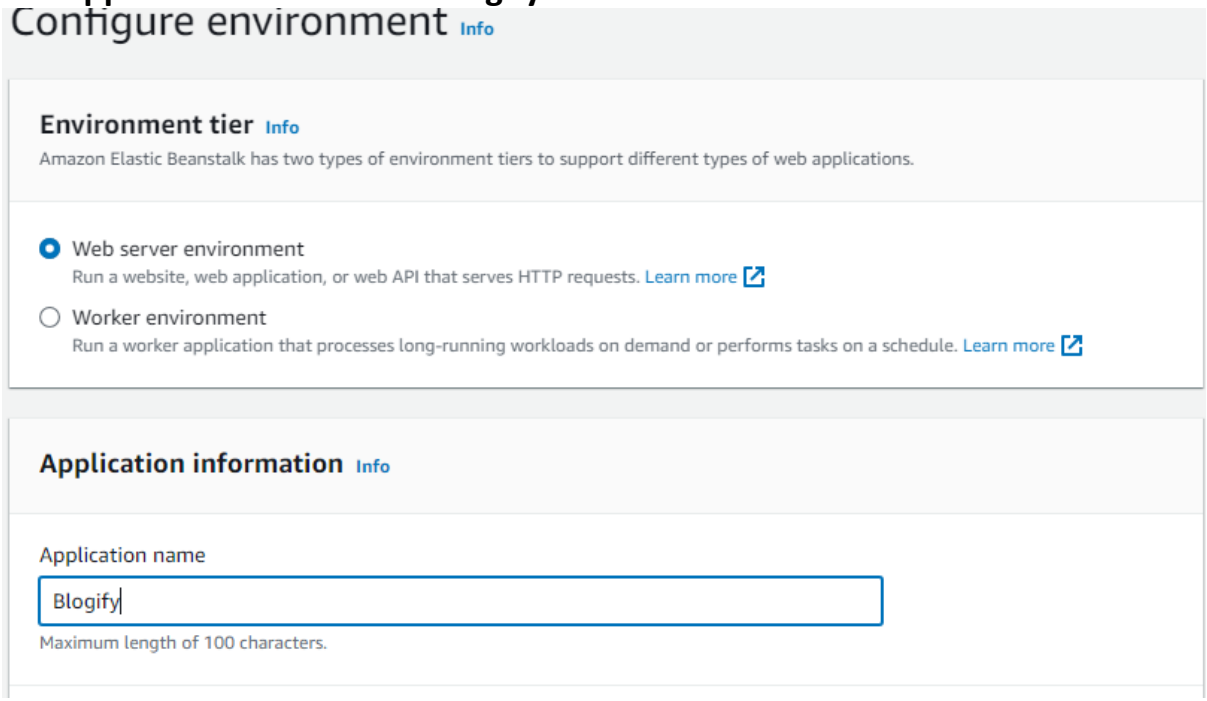
Open the Elastic Beanstalk console



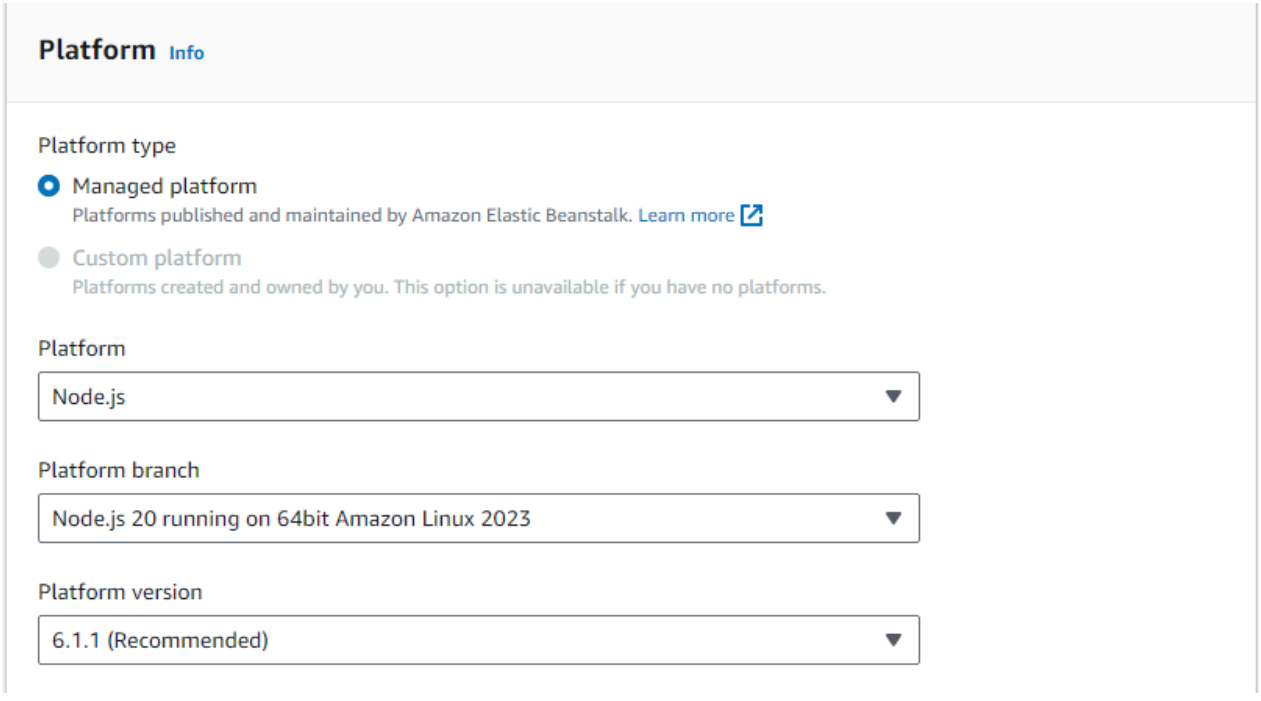
Choose Create application



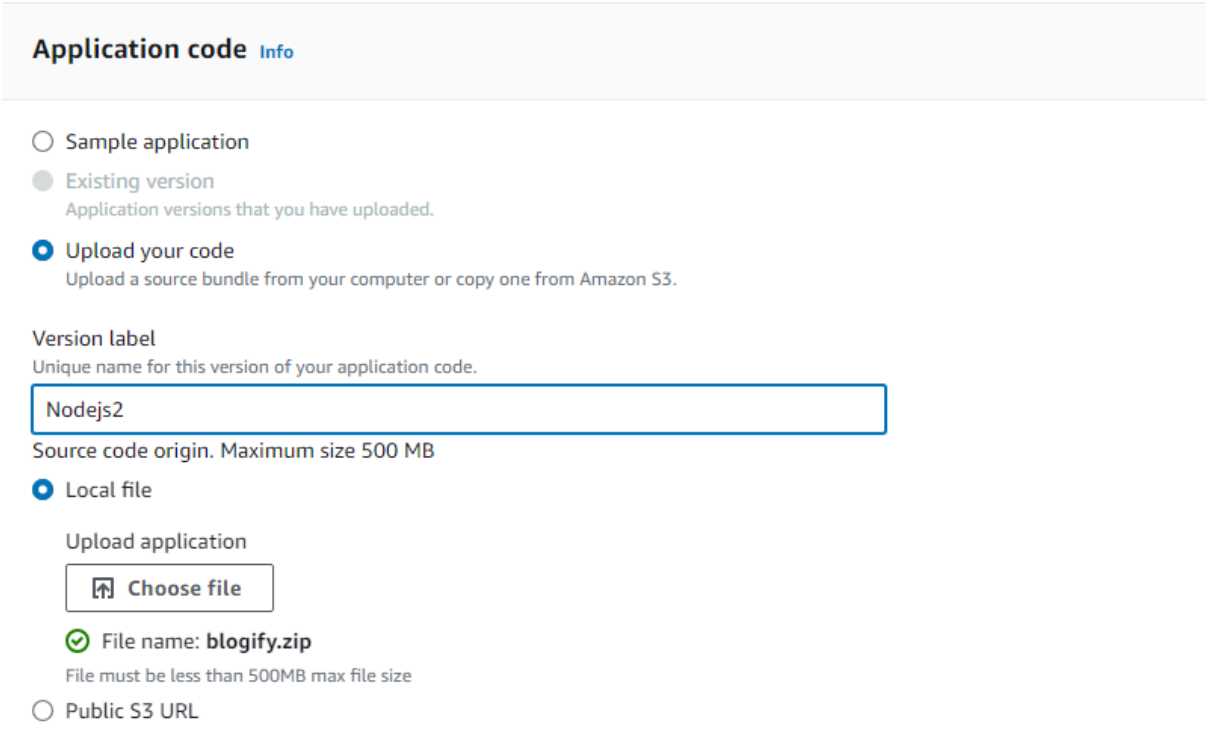
For Application name enter Blogify



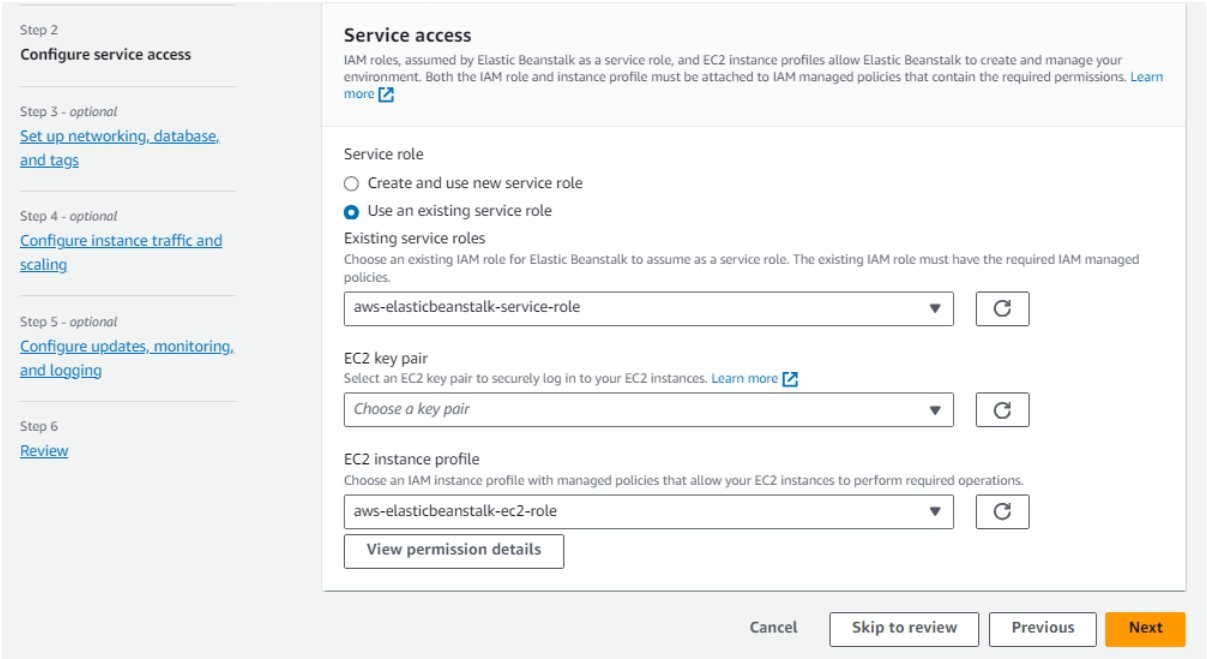
For Platform, choose a platform Node.js



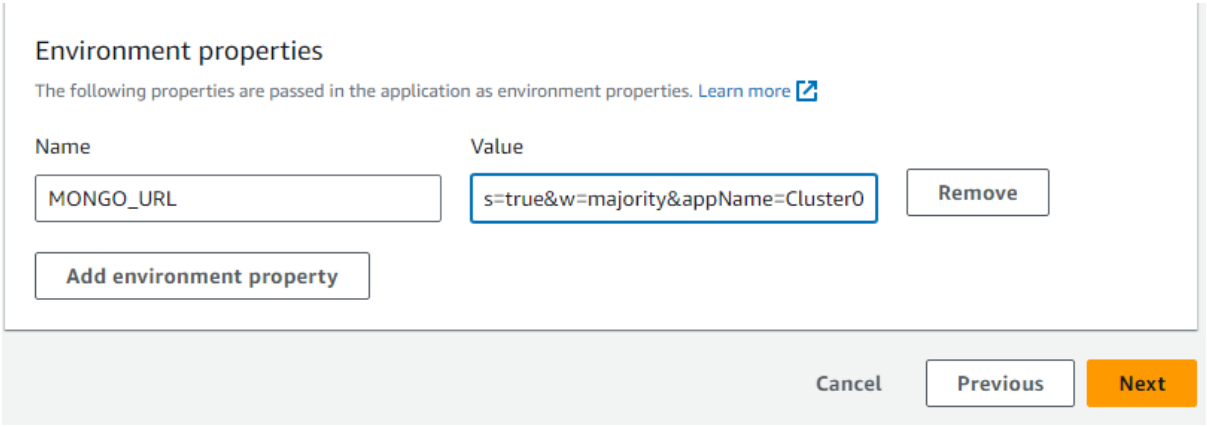
Upload .zip file of your application



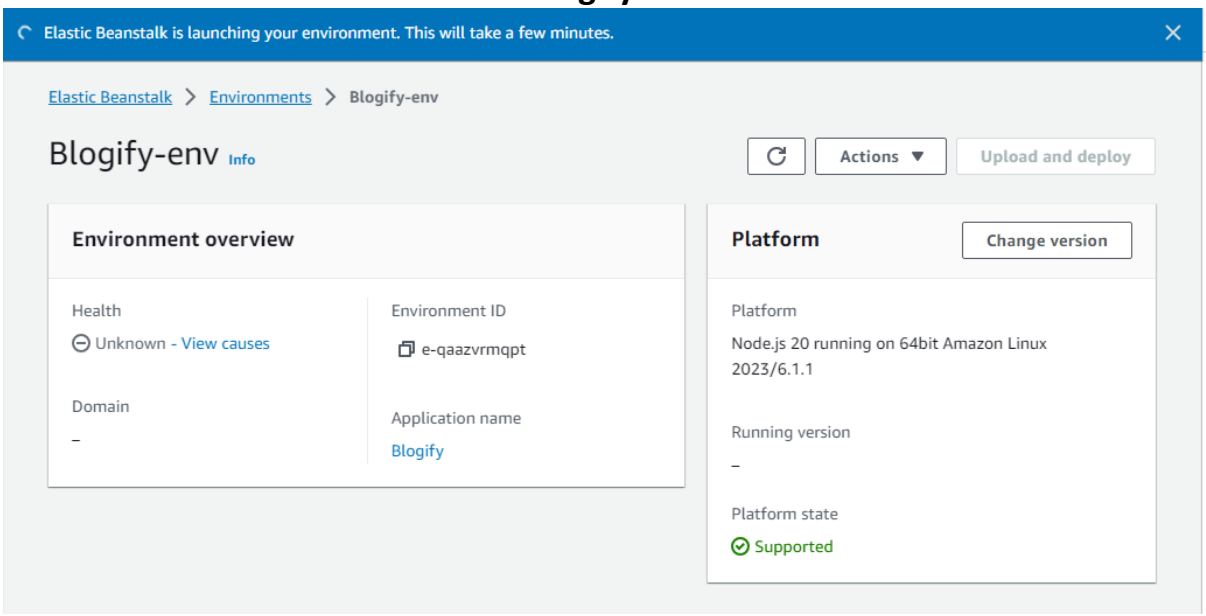
Choose Use an existing service role for Service Role
Choose one of the following, based on the values displayed in your list.
If **aws-elasticbeanstalk-ec2-role** displays in the dropdown list, select it from the EC2 instance profile dropdown list



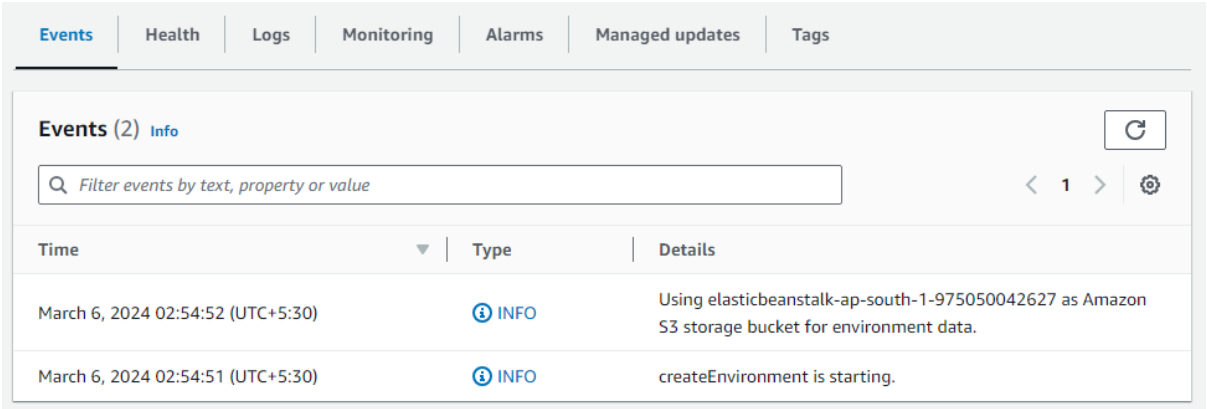
You can use connection strings to define connections between MongoDB instances and the following destinations through environment variable.



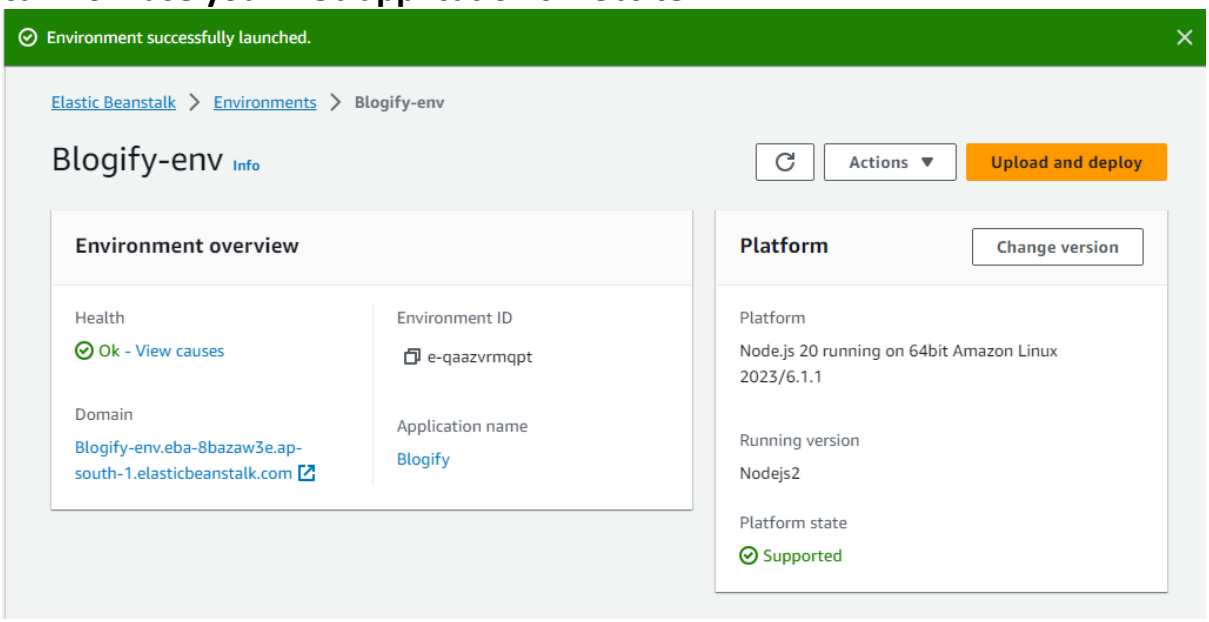
Launches an environment named Blogify-env with these AWS resources



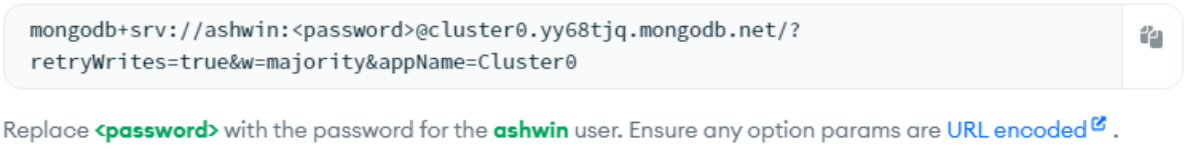
During the environment creation process, the console tracks progress and displays events



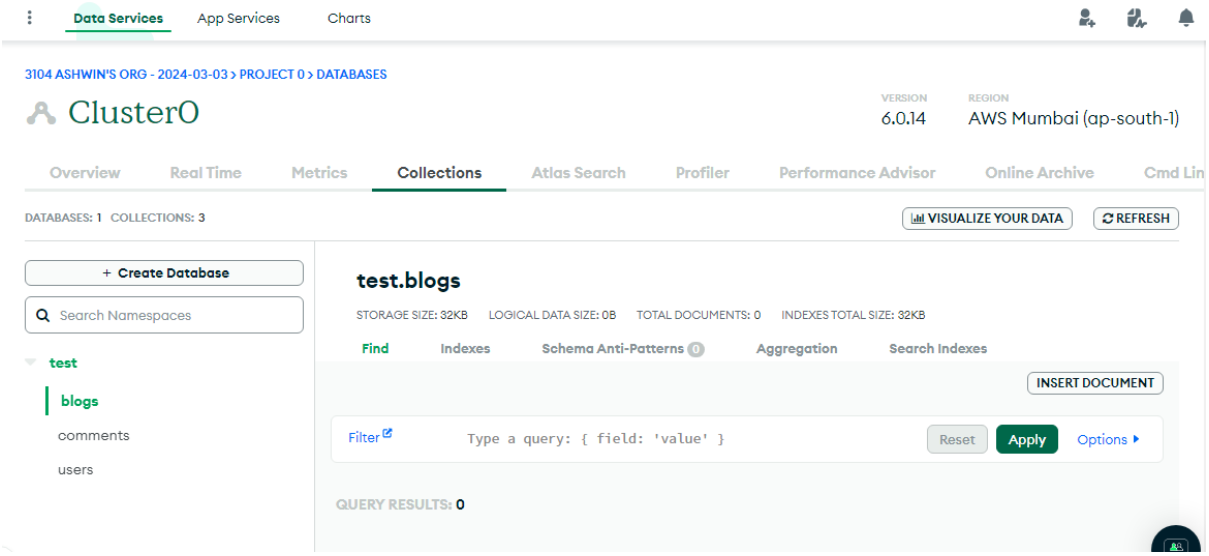
When all of the resources are launched and the EC2 instances running the application pass health checks, the environment's health changes to Ok. You can now use your web application's website



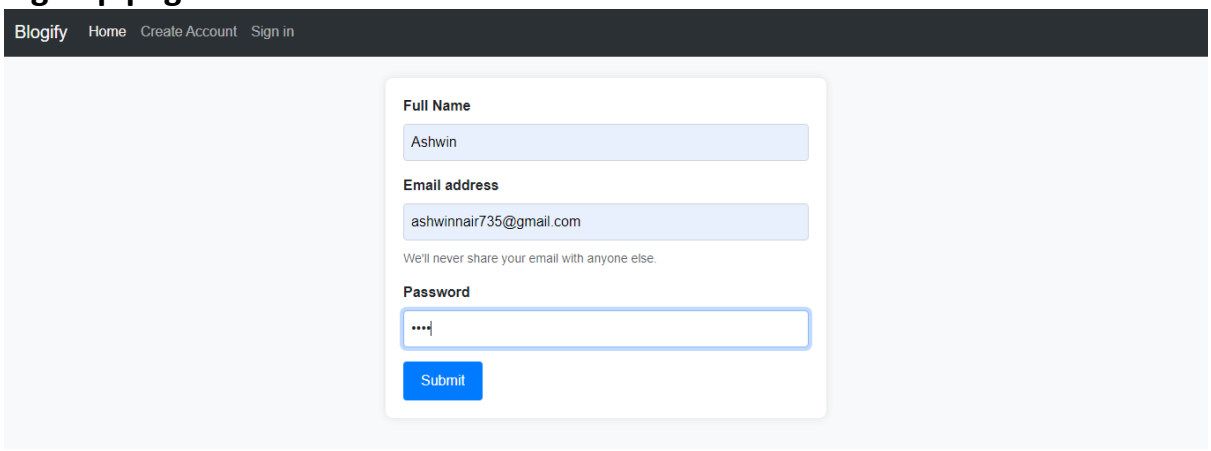
Mongodb connection string

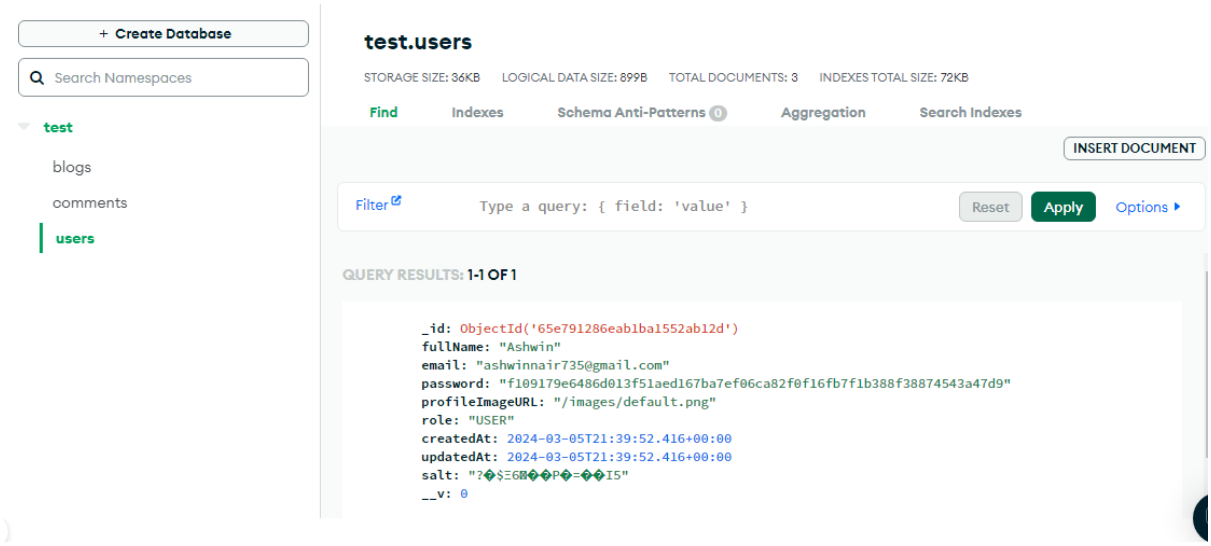


collections

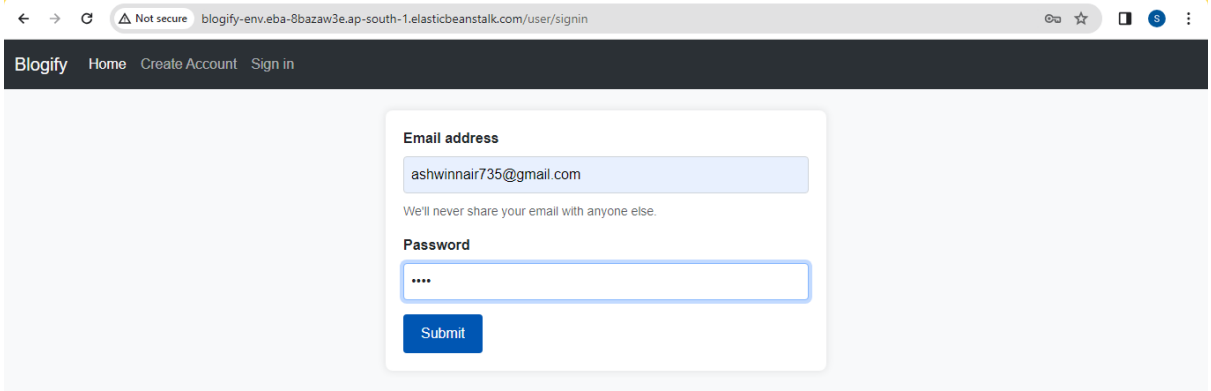


Sign up page

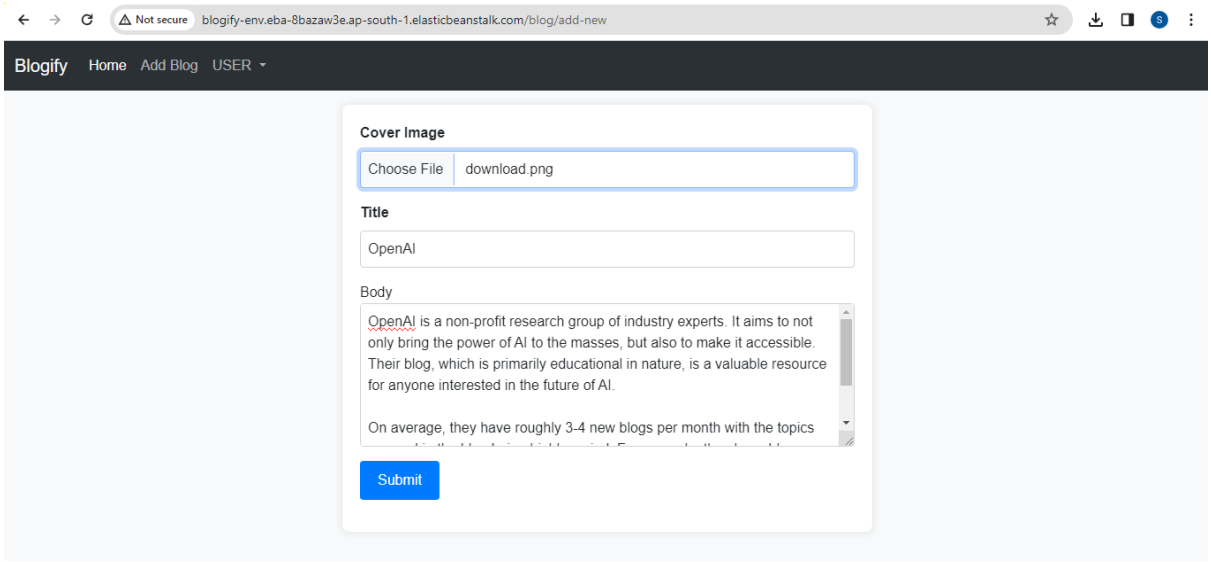


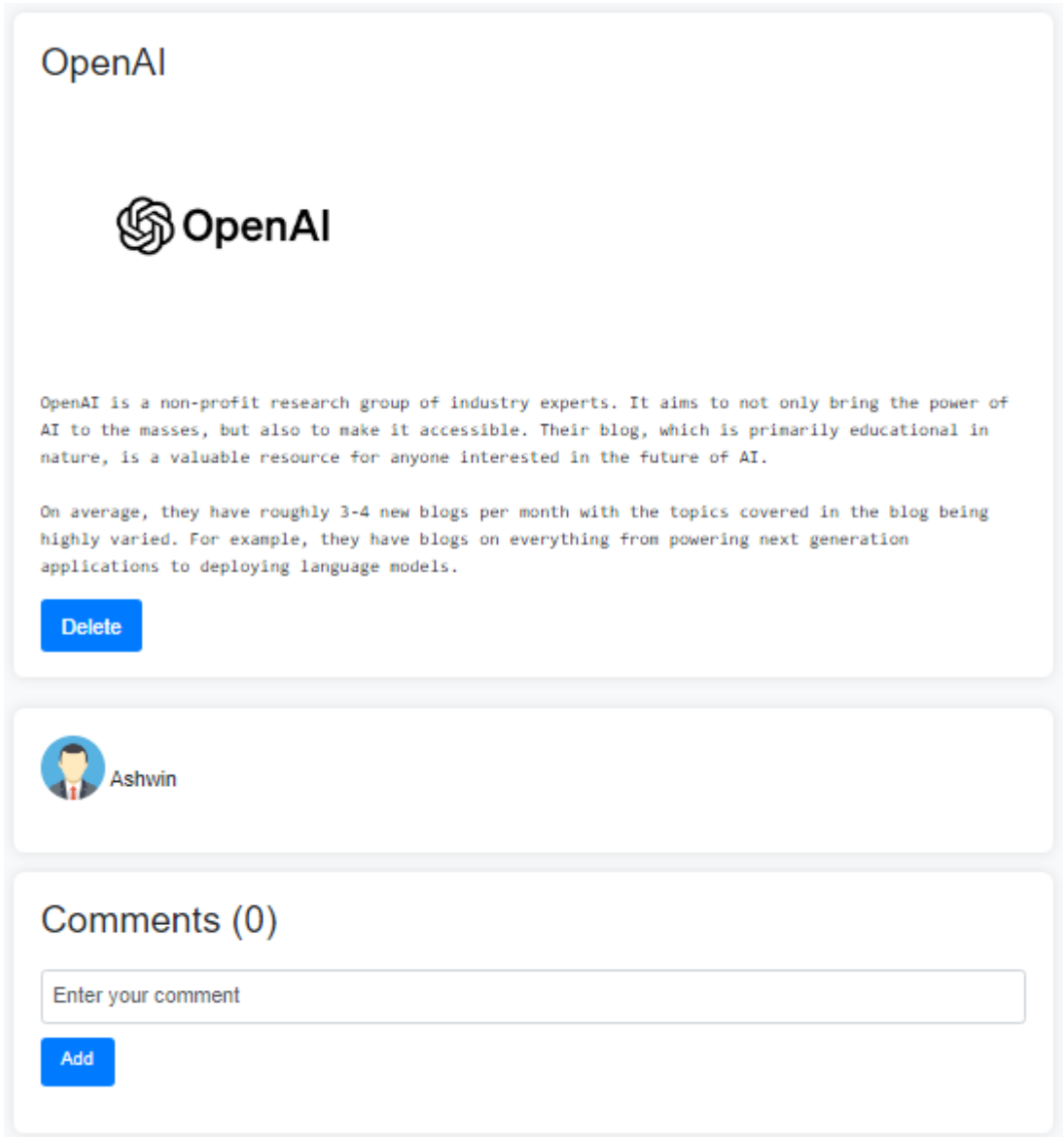


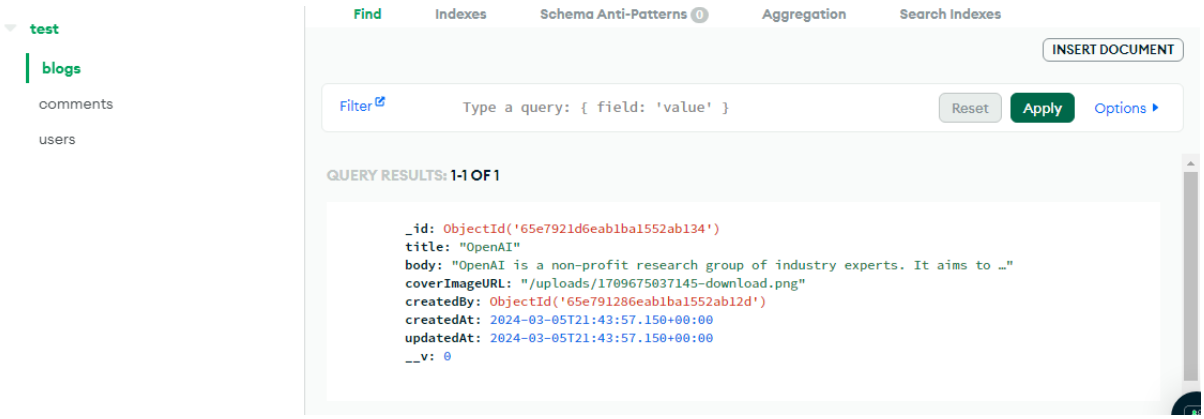
Sign in with authenticated user



Create a Blog



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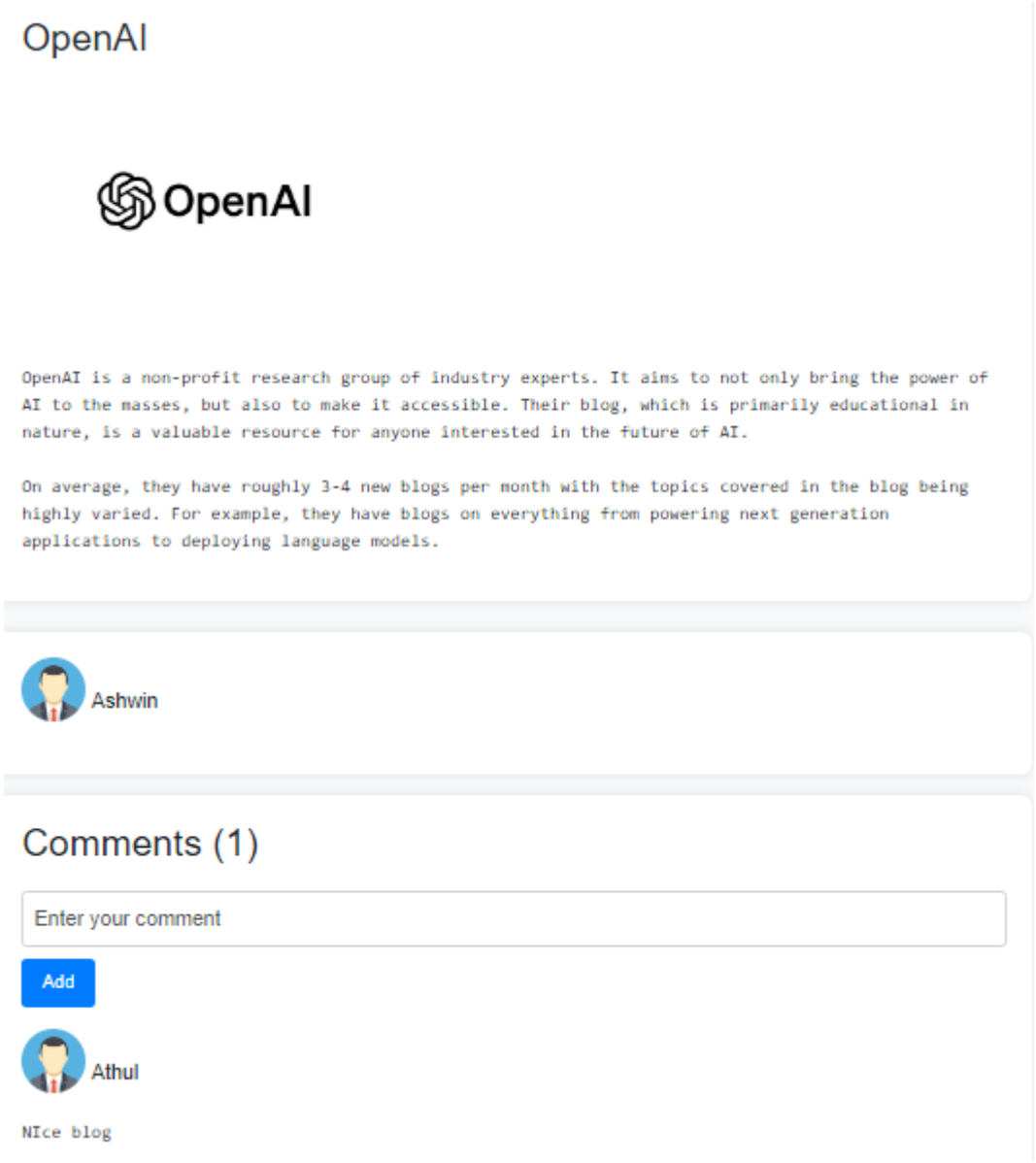
Comments


OpenAI
OpenAI
OpenAI is a non-profit research group of industry experts. It aims to not only bring the power of AI to the masses, but also to make it accessible. Their blog, which is primarily educational in nature, is a valuable resource for anyone interested in the future of AI.
On average, they have roughly 3-4 new blogs per month with the topics covered in the blog being highly varied. For example, they have blogs on everything from powering next generation applications to deploying language models.
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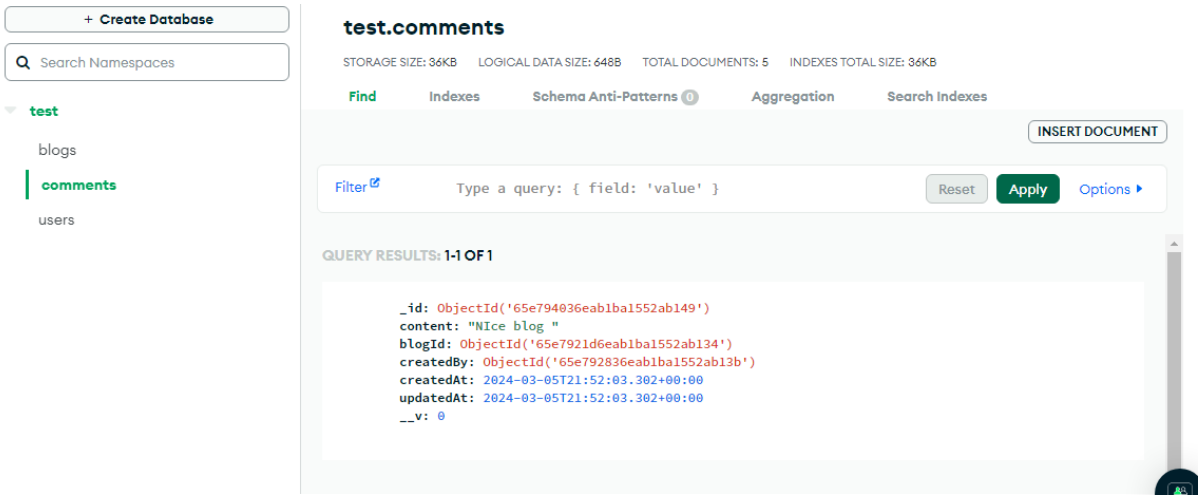

Conclusion

In conclusion, this project leverages AWS resources such as EC2 instances, security groups, S3 buckets, CloudWatch alarms, CloudFormation stacks, and domain names to host and manage a full-stack web application. Elastic Beanstalk simplifies the deployment process by automating resource provisioning, scaling, and load balancing, while providing a reliable and scalable platform for hosting web applications. By integrating various AWS services and technologies, the project demonstrates efficient deployment practices and showcases the capabilities of Elastic Beanstalk in deploying and managing web applications on AWS.

Case Study on “Driving Growth and Innovation: Coca-Cola Andina's Data Lake Journey with AWS”

Coca-Cola Andina Builds Data Lake on AWS, Increases Analytics Productivity by 80% for More Data-Driven Decision-Making

Coca Cola Andina is a Chilean company with more than 17,500 employees, licensed to produce and market The Coca-Cola Company's products in parts of Argentina, Brazil, and Chile and all of Paraguay. It is one of the leading bottlers in Latin America and one of the seven largest Coca-Cola bottlers in the world.

Overview

Coca-Cola Andina has the vision of promoting the profitable growth of its business, supporting its customers, and guaranteeing its more than 54 million consumers in Chile, Argentina, Brazil, and Paraguay the best possible experience. To achieve this, it develops world-class processes to increase its productivity and quality of service. One of the initiatives adopted to rise to this challenge was the development of a data lake on Amazon Web Services (AWS). By adopting storage, databases, computing, and analytical capabilities backed by AWS technology, Coca-Cola Andina managed to increase the productivity of the analytics team by 80 percent, allowing both the company itself and its customers to make decisions based on reliable data, promoting joint growth of the entire ecosystem, maintaining its competitive advantage, and increasing the company's revenue.

Opportunity

Coca-Cola Andina produces and distributes products licensed by The Coca-Cola Company within South America. The company has 17,500 employees and a presence in part of Chile, Argentina, Brazil, and the whole of Paraguay, serving more than 267,000 customers and refreshing 54 million consumers.

“We understand that Coca-Cola Andina's vision goes beyond obtaining profitability, and that the benefits we generate must reach all of society, both for current and future generations. We are sure that, through innovation and incorporation of new capabilities, such as data lakes and analytics, we will achieve sustainable growth for the benefit of our customers, consumers, and

the communities where we operate," says Miguel Angel Peirano, executive vice president of Coca-Cola Andina.

As a consumer packaged goods (CPG) company, Coca-Cola Andina has a direct relationship with customers and consumers. "Our customers are our company's partners, since they are a fundamental part of the distribution and sales chain. That is why we want them to grow with us—for them to have the necessary stock and to offer good service to consumers", explains Luis Valderrama, regional CTO of Coca-Cola Andina.

In fact, the CPG industry generates massive volumes of data, often stored in different systems which are cut off from one other, making it difficult to analyze the information.
Coca-Cola Andina uses SAP as a transactional core with data on customers, sales, products, etc. It also has RPA systems and B2B solutions with which it can engage with these customers. To ensure a more personalized and social experience, the company uses its CRM and smartphone applications, as well as other methods, to interact with consumers. Both cases have a common concept: data.

The company brings the data closer to its partners to enable its teams and partners to make decisions based on it. "However, having data in different systems or traditional data warehouses made it very complex," says Valderrama.

Coca-Cola Andina's challenge was to collect all relevant information on the company, customers, logistics, coverage, and assets together within a single accurate source. This led the company to decide to build a data lake.

Why AWS?
Coca-Cola Andina wanted an architecture that was easy to access, with reliable data and no limits on storage, response, or processing capacity. "This was the layer that would allow us to unite our traditional world with the digital world, in addition to making it possible to bring cognitive technologies, such as artificial vision, machine learning, natural language processing, voice processing, robotics, etc. to the business," Valderrama says.

The company chose Amazon Web Services (AWS) as the provider of all the technology and architecture for its data lake. "AWS was the cloud solution that

would meet all the expectations defined for our data lake," says Valderrama, adding that the architecture needed to include a platform as a service (PaaS) to allow solutions to be developed and dismantled quickly and economically, and that he was happy with the decision because the company has a culture of learning by doing.

Solution | Architecture & Services

The data lake became the single source of data generated by SAP ERP, CSV files, and legacy databases. Coca-Cola Andina was able to implement a technical architecture that covers the whole spectrum from data entry to exploitation, through analytics and machine learning tools.

The data lake uses Amazon Simple Storage Service (Amazon S3) to securely store its raw data for analytics, machine learning, and other applications. It also uses services such as Amazon QuickSight and Amazon Athena in the consumer layer; cognitive technologies, such as Amazon Personalize and Amazon SageMaker, for machine learning; AWS Lambda for serverless compute; Amazon DynamoDB as a key-value and document database; and Amazon Redshift to create data warehouses when necessary. "The architecture we built on AWS fulfills the expectation of having a data lake based on a PaaS," says Valderrama.

To ensure the best processes, and the best use and integration of these solutions, the company had the support of the AWS Professional Services team. “During 2020, Coca-Cola Andina worked hard to incorporate data lake and analytics knowledge shared by AWS Professional Services, managing to generate the tools and capabilities to become a “data-driven decision” company, focus on improving the experience and relationship with its consumers and customers, and generae productivity and efficiency in its processes,” says Nicolás Nazario Condado, digital transformation manager for Coca-Cola Andina.

Additionally, as part of the overall digital strategy, Coca-Cola Andina implemented a wider cloud infrastructure on AWS, in addition to the data lake, and began developing other digital products and solutions to address various strategic verticals for customers, consumers, and internal processes.

Amazon Athena

Amazon Athena is an interactive query service that makes it easy to analyze data in Amazon S3 using standard SQL. Athena is serverless, so there is no infrastructure to manage, and you pay only for the queries that you run.

Amazon Lambda

AWS Lambda is a serverless compute service that lets you run code without provisioning or managing servers, creating workload-aware cluster scaling logic, maintaining event integrations, or managing runtimes.

Amazon SageMaker

Amazon SageMaker helps data scientists and developers to prepare, build, train, and deploy high-quality machine learning (ML) models quickly by bringing together a broad set of capabilities purpose-built for ML.

Amazon Professional Services

The AWS Professional Services organization is a global team of experts that can help you realize your desired business outcomes when using the AWS Cloud.

Outcome

Coca-Cola Andina has created a multidisciplinary team with partners from the business and technology world to combine knowledge and had training provided by AWS Professional Services.

With the new cloud structure and more than 300 hours of training provided by AWS, Coca-Cola Andina acquired the necessary capabilities to become a data-driven decision company, increasing productivity and efficiency in decision-making across the different areas of the business.

In fact, the cloud infrastructure allowed Coca-Cola Andina to improve and implement new products and services, customizing the different value propositions for its more than 260,000 customers. This led to an increase in the company's revenue by improving the efficiency of promotions, reducing stock shortages—and thus improving the shopping experience of its customers, and increasing the productivity of the analysis team by 80 percent. Coca-Cola Andina managed to ingest more than 95 percent of the data from its different areas of interest, which allows it to build excellence reports in just a few minutes and implement advanced analytics.

With all the resources and functionality that the data lake enables, Coca-Cola Andina ensures its partners and customers have access to reliable information for making strategic decisions for the business. In this way, the company united the traditional world with the digital world, allowing teams and partners to make decisions based on data.
Coca-Cola Andina plans to develop new applications and solutions on its AWS infrastructure. These include self-management applications, dynamic pricing strategies, and machine learning models, among others.

Future Plan

Coca-Cola Andina plans to develop new applications and solutions on its AWS infrastructure. These include self-management applications, dynamic pricing strategies, and machine learning models, among others.