ELO Learning

MULTI-CLOUD DEPLOYMENT MODEL DESCRIPTION

ZERO DAY

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1. Introduction

We're talking about employing multiple cloud providers at the same time under this paradigm, as the name implies. It's similar to the hybrid cloud deployment approach, which combines public and private cloud resources. Instead of merging private and public clouds, multi-cloud uses many public clouds. Although public cloud providers provide numerous tools to improve the reliability of their services, mishaps still occur. It's quite rare that two distinct clouds would have an incident at the same moment. As a result, multi-cloud deployment improves the high availability of your services even more.

Advantages of the Multi-Cloud Model

- You can mix and match the best features of each cloud provider's services to suit the demands of your apps, workloads, and business by choosing different cloud providers.
- **Reduced Latency:**
  To reduce latency and improve user experience, you can choose cloud regions and zones that are close to your clients.
- **High availability of service:**
  It's quite rare that two distinct clouds would have an incident at the same moment. So, the multi-cloud deployment improves the high availability of your services.

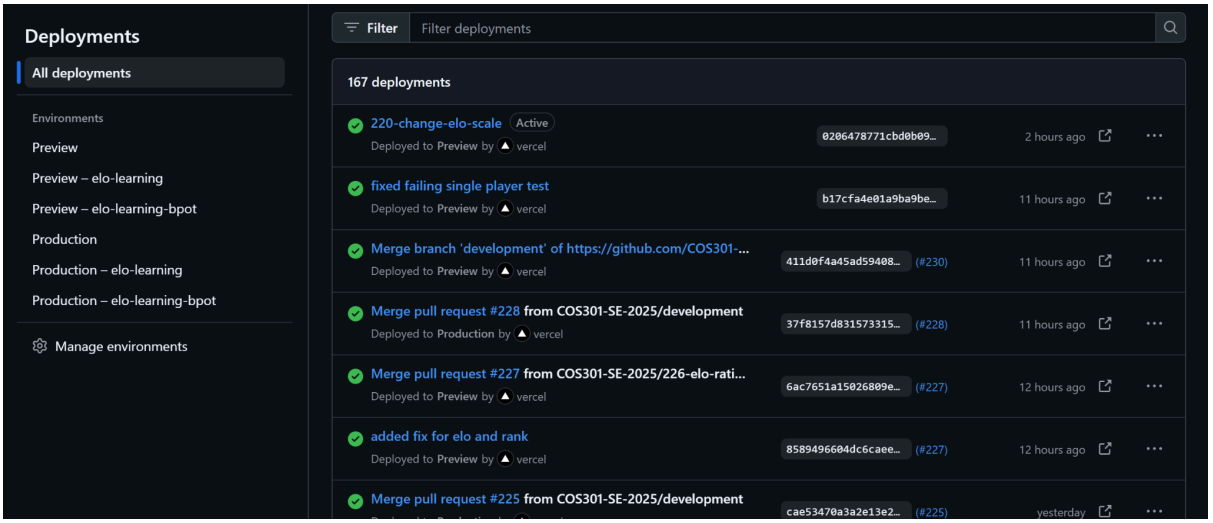
Disadvantages of the Multi-Cloud Model

- **Complex:**
  The combination of many clouds makes the system complex and bottlenecks may occur.
- **Security issue:**
  Due to the complex structure, there may be loopholes to which a hacker can take advantage hence, makes the data insecure.

Source: Overview of Multi Cloud - GeeksforGeeks

ELO Learning uses Multi Cloud model for deployment, with the frontend served via **Vercel** cloud platform and the backend via render cloud platform, these two providers were chosen as they offered the best security, space, scalability, integration and price. Vercel and Render are free of charge which is essential for a project of our size and we have ample resources to work with in terms of security and cloud storage, this also makes it easier to scale the application in future as it is easier to grow on those platforms by paying for more facilities

Vercel also offers us a preview of every branch in development before it is actually merged into main, the team has found this to be especially useful because we can have an idea of which branches render as they should before we have even merged and ruined the rest of the codebase.



Render on the other hand strictly listens for changes to the backend folder from the main branch, every push to main that affects the backend directory forwards the new version to render as well without interrupting the uptime or availability of the application