

1) How would you deploy this application in production?

It's essential to prioritize security, considering its interactions with the client environment and users. Given Kafka's distributed nature, leveraging its strengths is crucial. While deploying we have to make sure that the cluster has an optimal number of the broker and the partition replicas so that it can be fault tolerant which will be helpful in node failures and prevent data loss. I will also leverage the Kafka's distributed architecture so that it is always available by placing it into the different availability zones.

2. What other components would you want to add to make this production ready?

I will add multiple brokers to the cluster which will be distributed and which will contain the replicas of the partition which stores the utmost important thing.

3. How can this application scale with a growing dataset?

We can scale this application by adding new brokers, increase the consumption of messages by increasing the number of consumers.