Demonstrating high scalability using Kubernetes

Domain: Distributed Systems and Cloud Computing

Today's (web) applications offer multiple services to meet the needs of the customer. For example, a customer interacts with login, search, payment, and delivery (...etc.) services to get a product home delivered from Amazon.in.

A traditional (web) application would have all the services as part of a monolithic architecture, where one application runs/supports all the services. But a monolithic architecture based application often breaks under a fluctuating user demand.

To solve this problem, a modern (web) application uses a micro-service architecture to decompose the business logic into discrete micro-services that are easy to deploy, maintain, and scale. Microservices are often containerized using platforms like Docker and are managed by an orchestration framework like Kubernetes. The aim of this project is to demonstrate high-scalability and fault-tolerance (to a certain extent) in micro-service oriented web-application.

Keywords: Docker, Kubernetes, High scalability, Containerization, Microservice architecture

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