1. **INTRODUCTION**

Microservices architecture is an approach where an application is divided into smaller, loosely coupled services that can be developed, deployed, and scaled independently. This gives us a lot of advantages like scalability, resilience, agility and coping up with growing technology.

These microservices handle specific business functionality and communicate with other microservices via API to serve the request better.

They are easy to maintain and deploy. They can be containerized with all the necessary runtime environments and could be run on any platform. This feature is very much useful when it comes to distributed architecture.

In this report, we will delve into the implementation of a custom controller auto-scaler within a Kubernetes environment to dynamically scale our microservices-based application. This approach leverages the strengths of both Kubernetes and microservices to achieve seamless scalability and ensure optimal performance under varying load conditions.