

# Distributed Software System using Microservices Architecture and Message Broker - A case study

## Overview:

ABC Mortgage is a leading mortgage company with a nationwide presence. The company has been in the business for over 20 years and has helped thousands of families achieve their dream of owning a home. However, as the company expanded, they faced challenges in scaling their software systems to meet the demands of their growing customer base. They needed a solution that could provide high availability, resilience, and scalability while maintaining a high level of performance. This case study explores how ABC Mortgage leveraged RabbitMQ and microservices to develop a distributed system that could meet their needs.

## Challenges:

ABC Mortgage's existing monolithic architecture had limitations in terms of scalability and performance. The system was built using a traditional client-server architecture and had a tight coupling between the different components. This made it difficult to scale the system as a whole, resulting in frequent downtime and degraded performance during peak periods. The company needed a new approach that would allow them to build a more resilient and scalable system. They wanted to move

away from the traditional client-server architecture and adopt a distributed architecture that would allow them to break down their monolithic system into smaller, independent components.

### **Solution:**

After evaluating various options, ABC Mortgage decided to adopt a microservices architecture, presented to them and developed by Rinsoft. They divided their monolithic application into smaller, independent services that could be deployed and scaled independently. Each service was responsible for a specific business function and communicated with other services through APIs messaging broker.

To ensure high availability, resilience, and scalability, ABC Mortgage used RabbitMQ as their message broker. RabbitMQ is an open-source message broker that provides reliable message delivery between services. It is lightweight and easy to use, making it an ideal choice for microservices architectures. ABC Mortgage also used Kubernetes as their container orchestration platform. Kubernetes provided a unified platform for deploying and managing their microservices. It allowed them to automate their deployment process and scale their services dynamically in response to changing demand.

### **Results:**

The new distributed system enabled ABC Mortgage to achieve high availability and scalability. The system could handle a large number of transactions simultaneously, and downtime was significantly reduced. The use of RabbitMQ ensured reliable message delivery between services, and Kubernetes made it easy to deploy and manage their microservices.

The new architecture also allowed ABC Mortgage to improve the performance of their system. The system was faster and more

responsive, providing a better user experience for their customers.

**Conclusion:**

ABC Mortgage's adoption of RabbitMQ and microservices architecture allowed them to build a distributed system that was resilient, scalable, and performed well. The system was able to handle a large number of transactions simultaneously, and downtime was significantly reduced. The new architecture also improved the performance of their system, providing a better user experience for their customers. By adopting modern technologies and architectures, ABC Mortgage was able to future-proof their system and stay ahead of their competition.