Praktikum: Cloud Data Bases
Final Report

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ABSTRACT

In today's world communication is the key between people to retrieve information they need. Almost every software system includes a messaging platform nowadays in order to ease their users life by offering them a chatting space where essential information can be distributed.

In this paper we will initially describe our replicated and distributed storage service from milestone 4. Completing milestone 4, we developed a service where multiple clients can put, get or delete data records with the help of replicated and distributed storage servers. The architecture that the storage servers are situated is a ring topology comprised of one server as a coordinator node and following two nodes as replicas. The replication strategy guarantees eventual consistency, which is crucial for distributed database systems. The logic behind eventual consistency is to provide consistent value for a specific data item among all the nodes, given enough time without any updates. Furthermore, implemented strategy ensures increased availability since key-value pairs are distributed over three nodes preventing a performance bottleneck.

Following that we will examine our extension, Milestone 5, which is based on a group chat system and study the features of the group chat in greater detail. The main idea is that multiple clients can join a chatroom with a specific chatID by their userID's and exchange messages in the chatroom. Moreover, clients can perform get requests while chatting and every group has a limit for their number of clients.

Eventually we conclude our paper with highlighting the most important features of our extension and touch upon the significance of the outcomes using a group chat.

CCS CONCEPTS

• **Distribution of data records(key-value pairs) → Storage service**; • **Replication** → *Redundancy*; • **Group chat** → Information retrieval system among clients.

KEYWORDS

client, server, key-value store, coordinator node, replica node, read-write requests, client application logic, external configuration service(ECS), replicated storage service, data distribution, consistent hashing, replication, eventual consistency, availability, data persistence, group chat, chatID, chatroom, userID

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1 INTRODUCTION

in the introduction part we can mention:
–our motivation
–why did we come up with this idea
–when is it helpful
–who can use this system
–our use case
–we can discuss these together

2 BACKGROUND

we can mention briefly in this section what we have done so far:
–client-server architecture
–replication and distribution of data
–Base properties: basic availability, soft-state, eventual consistency
–milestone 4
–milestone1, milestone2, milestone3 : should we mention how we got this point, how we developed our system over the milestones??

3 GROUP CHAT

detailed explanation of our extansion

4 SUMMARY

To conclude our paper, we

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