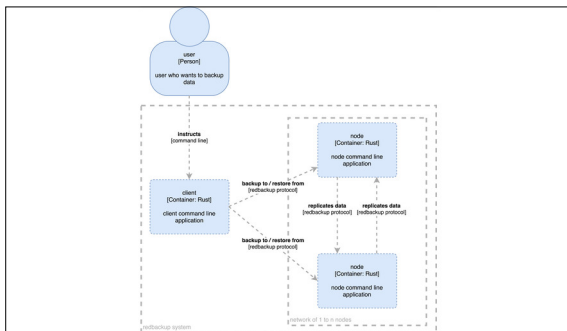| Studenten	Raphael Martin Zimmermann, Fabian Hauser
Examinator	Prof. Dr. Farhad D. Mehta
Themengebiet	Software Engineering - Core Systems

Raphael Martin Zimmermann

Fabian Hauser

Redbackup: A Redundant Distributed Backup System Prototype
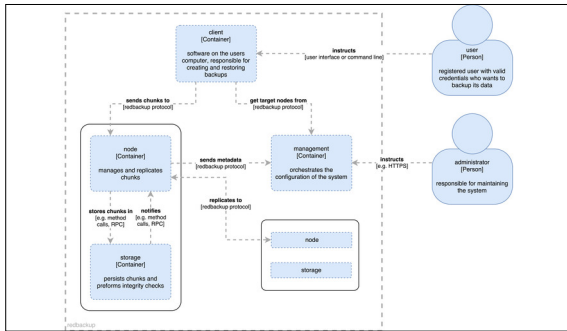
High-level shape of the redbackup system.

Prototype structure as implemented in the study project.

Einleitung: Today, most individuals and small enterprises have a limited choice of how and where they backup their data.

Ausgangslage: One possibility is via local storage media, for instance using external hard disk drives. This requires considerable administration and may lead to a single point of failure, since location redundancy requires extra effort. A second possibility is to use cloud backup storage. These may lead to issues of privacy and a high dependency on third-party providers.

There are no easy-to-use distributed backup systems with private data storage on the market today.

Ergebnis: In this study project we propose a redundant distributed backup system to address this issue.

The architecture of this system consists of backup nodes which exchange data using a peer-to-peer protocol, as well as a client application that creates and restores backups. A management system has been introduced to allow users to manage multiple backup nodes.

As a proof of concept, a prototype of the proposed client and node applications with a reduced feature set has been implemented in the Rust programming language.