Uni Distributed Systems Topics

Topics for the distributed systems course at HdM Stuttgart

Felicitas Pojtinger

2023-02-04

Contents

1 Meta

1.1 Contributing

These study materials are heavily based on professor Kriha's "Verteilte Systeme" lecture at HdM Stuttgart and prior work of fellow students.

Found an error or have a suggestion? Please open an issue on GitHub (github.com/pojntfx/uni-distributedsystems-notes):

Figure 1: QR code to source repository

If you like the study materials, a GitHub star is always appreciated :)

1.2 License

Figure 2: AGPL-3.0 license badge

Uni Distributed Systems Topics (c) 2023 Felicitas Pojtinger and contributors

SPDX-License-Identifier: AGPL-3.0

2 Topics

- I/O Process Models
- Delivery Guarantees
- Replication, Consensus, Eventual Consistency, FIFO, Reliable Broadcasting
- Synchronization, Shared Nothing/Shared Something
- Correctness, Liveness, Complexity, Failure Modes
- Fan-Out Architecture
- Two-Phase Commits (2PC)
- Sharding, Partitioning
- Information and Distribution Architecture
- Concrete design proposal, e.g. Twitter (Scalability, availability, security)