



Bachelor Thesis

2017-07-19

Failover Proxy for MongoDB Replication

Context

Database Systems are central storage units in many applications. Due to scalability, distributed database systems are becoming more and more important: the database system not only consists of a single database node, but uses data replication and data partitioning to achieve high availability and fault tolerance.

MongoDB can be used as a stand-alone database server, but can be used in a distributed setup as well. MongoDB uses the Single-Master or Master-Slave approach for replicating data, where one node (the master) is exclusively allowed to handle read and write requests, while the slaves are used for read requests or even only for backup and failover scenarios when the master fails. Master failovers happen automatically in MongoDB. If the master node becomes unavailable, the remaining slaves elect a new master. Unfortunately this takes some seconds, and all connected clients have to reconnect to the new master node.

Scope of the Thesis

The scope of this thesis is to develop a proxy, which runs between clients and the mongoDB master node. The proxy is responsible for delaying requests in the case of a master failover. This way, the clients have always a connection to this proxy without the need for reconnecting to the new master node.

Requirements and Comments

Experiences with Linux, database systems (ideally MongoDB), computer networking and programming skills are beneficial for this bachelor thesis.

If you are interested in this or similar theses, please contact Christopher Hauser either by mail or directly in his office.

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