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WEB 335: Discussion 8.1

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Replication

“Replication provides redundancy and increases data availability. With multiple copies of data on different database servers, replication provides a level of fault tolerance against the loss of a single database server” (MongoDB, 2022). Replica sets have data bearing nodes, one of which is deemed the primary node. The primary node receives all operations. It then records changes that occur to the data. After the primary set records the changes, the secondary sets will replicate it so that their data will be a replica of the primary’s. If the primary cannot complete the write, a secondary will appoint itself as the new primary. The operations that are applied to the secondaries are done asynchronously.

Failover is the ability to switch automatically and seamlessly to a reliable backup system. When a component or primary system fails, either a standby operational mode or redundancy should achieve failover and lessen or eliminate negative impact on users (Druva, n.d.). Failover is when you have two or multiple servers attached, as long as the primary server is steady the secondary one is on standby. As soon as something irregular occurs, the secondary server takes the database over.

A rollback is the operation of restoring a database to a previous state by canceling a specific transaction or transaction set. Rollbacks are either performed automatically by database systems or manually by users (Techopedia, n.d.).

MongoDB attempts to avoid rollbacks, which should be rare. When a rollback does occur, it is often the result of a network partition. Secondaries that can not keep up with the throughput of operations on the former primary, increase the size and impact of the rollback. MongoDB drivers can detect the loss of the primary and automatically retry certain write operations a single time, providing additional built-in handling of automatic failovers and elections (MongoDB, 2022).

Resources:

*Replication*. (2022). Mongodb.com. https://www.mongodb.com/docs/manual/replication/

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*What is a failover? Definition and related FAQs | Druva*. (n.d.). Www.druva.com. https://www.druva.com/glossary/what-is-a-failover-definition-and-related-faqs

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*What is a Rollback (in Databases)? - Definition from Techopedia*. (n.d.). Techopedia.com. <https://www.techopedia.com/definition/9229/rollback>

*Rollbacks During Replica Set Failover — MongoDB Manual*. (n.d.). Www.mongodb.com. https://www.mongodb.com/docs/manual/core/replica-set-rollbacks/

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