MDCC: Multi-Data Center Consistency (EuroSys 2013)

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MDCC [KPF+13] describes an optimistic commit protocol for geo-replicated transactions that does not require a master or static partitioning, and is strongly consistent with cost similar to eventually consistent protocols.

It combines a bunch of tricks for optimizing commit latency, including ideas from Generalized Paxos, Fast Paxos. It only provides read committed isolation. Essentially, it (1) runs a *per-record* Generalized Paxos instance and (2) ensures every prepare has been received by a fast quorum of replicas (3) disallows aborts for successfully prepared records and (4) piggybacks notifications of commit state on subsequent transactions.

References

[KPF+13] Tim Kraska, Gene Pang, Michael J. Franklin, Samuel Madden, and Alan Fekete. Mdcc: multi-data center consistency. In *Proceedings of the 8th ACM European Conference on Computer Systems*, EuroSys '13, page 113–126, New York, NY, USA, 2013. Association for Computing Machinery.