Samodya Abeysiriwardane
sabeysir@purdue.edu

Branch consistent data store for partial replication

The goal of the project is to build a branch consistent data store (inspired by TARDiS and Git). TARDiS although has branch isolation due to it's N-way merging strategy needs full replication of all branches. In this project, we can look at partial replication with 3-way merging strategy. Partial replication can be attained by on-demand PUSH, PULL based synchronization.

An use case would be a data store that is used by IoT devices, that synchronizes with a master data store. Since resources are limited in the IoT device, it can operate in (branch) isolation on a partial replica. Later on, the device can chose to synchronize with the master datastore to PUSH its transactions and PULL the state of master store.

References

TARDiS: A Branch-and-Merge Approach To Weak Consistency, SIGMOD 2016.
https://www.cs.utexas.edu/~lorenzo/papers/Crooks16Tardis.pdf