A Generic Middleware to Instantly Sync Intensive Writes of Heterogeneous Massive Data via Internet

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Abstract: Industry data centers often need to sync data changes reliably and instantly from a large-scale of heterogeneous autonomous relational databases accessed via the not-so-reliable Internet, for which a practical universal sync middle of low maintenance and operation costs is most wanted, but developing such a product and adapting it for various scenarios are a very sophisticated and continuous practice. The authors have been devising, applying, and optimizing a generic sync middleware system, named GSMS since 2006, holding the principles or advantages that the middleware must be SyncML-compliant and transparent to data application layer logic, need not refer to implementation details of databases synced, does not rely on host computer operating systems deployed, and its construction is light weighted and hence, of low cost. A series of ultimate experiments with GSMS sync performance were conducted for a persuasive example of a source relational database that underwent a broad range of write loads, say, from one thousand to one million intensive writes within a few minutes. The tests proved that GSMS has achieved an instant sync level of well below a fraction of millisecond per record sync, and GSMS’ smooth performances under ultimate write loads also showed it is feasible and competent.

Keywords: heterogeneous massive data, instantly sync intensive writes, Internet generic middleware design, optimization

Conference Title: ICDIM 2021: International Conference on Data Integration and Mining
Conference Location: Auckland, New Zealand
Conference Dates: December 01-02, 2021