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ABSTRACT

Decentralised Database Replication

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Today's decentralised and geographically dispersed organisations generate a tremendous volume of data daily at each of its locations. As such, cost effective methods for sharing this data among locations or collating this data in one location are constantly being sought, as information is key to the effective management of any enterprise.

In this paper, decentralised database replication is explored as one cost effective method of sharing data among several databases. Decentralised Database Replication is the asynchronous movement of data between a database acting as a data publisher and another acting as a data subscriber. This type of replication is typically implemented in two forms, namely, data-pumps or store-and-forward mechanisms.

Many vendors have provided decentralised database replication solutions. However, for the analysis of this database replication method Centura Software Corporation's database replication solution *Centura Ranger* was used to review the mechanisms of decentralised database replication.

Decentralised database replication is focused as microcomputer based solution, and does not provide the real-time data currency as the mainframe based Two-Phase-Commit protocol. Thus, in considering this replication method as a cost effective solution to a business problem one needs to be cognisant of several factors viz.:- *data partitioning* between publisher and subscriber databases, *data communications* infrastructure requirements, *data synchronisation* mechanisms/features, and most importantly, *conflict management* schemes.

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