Checking the efficiency of integrity tests in distributed and parallel database  
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Abstract

With the increased use of the applications that deal with massive collections of data, integrity checking became a critical problem. Efficient checking could be achieved by deriving a simplified form of the integrity constraints against the new database state before the update operation is performed. Most of the research projects in this area are concentrated on deriving sufficient integrity tests for distributed databases. However, no attention has been given to validating the appropriateness of these integrity tests. In this paper, we provide a complete solution for checking constraints in the distributed database system. The proposed technique is not limited to generate sufficient and complete integrity tests but it also selects the suitable test from several alternative tests. Experimental results showed how the complete tests can significantly improve the performance of the constraint checking mechanisms with respect to the amount of data transferred across the network.

Keywords: distributed database, integrity maintenance, integrity constraints, integrity tests