

## Abstract

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There has been an extensive demand in the use of databases for decision support in these days. This was mainly due to the fact that information, one of the most precious assets of an organization, can assist in decision making and this way considerably improves the value of an organization. This phenomenon is a result of the increased availability of new technologies to support capable storage and retrieval of large volumes of data, namely data warehousing. Thus, we could define data warehouse as “*a repository of data that has been extracted and integrated from heterogeneous and autonomous distributed sources*” [Kimball96].

Data warehouses usually contain a huge amount of data that must be analyzed and, provide that analysis, helping in the organizational decision making process. The success of this kind of support depends greatly on database systems and correlated analysis tools. Data warehouses differ significantly from the traditional database applications. Data warehouses provide a different context in which huge amounts of data must be processed efficiently and queries are often complex, but still require interactive response times. In data warehouse environments the data is used for decision support and large sets of data are read and analyzed.

One of the most important requirements of a data warehouse server is the query performance. The principal aspect from the user perspective is how quickly the server processes a given query: “the data warehouse must be fast”. The main focus of our research is finding adequate solutions to improve query response time of typical data warehouse queries and improve scalability using an environment that takes advantage of characteristics specific to the data warehouse context. Our proposed model provides very good performance and scalability even on huge data warehouses.