TABLE OF CONTENTS

Chapter 3

Chapter 4

Chapter 5

Dedication

I think I could spend a lifetime trying to give back what my parents gave to me.

I know those times were hard on my Dad. He worked extremely hard for every penny he made. I admire my Dad so much for what he did, and what he had to share with me.

My Mom, I wish to tell her thank you for being my Mom for all these years. If I had to choose a Mother it would be you. You don't have to give birth to be one. All you have to do is truly give your love and guidance! Which, that is what you have done for me!! And I know I don't tell you enough that I couldn't love you any more than if you have given birth to me. I love you!

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Abstract

Timesten is an in-memory relational database software product from Oracle Corporation. Timesten is designed for low latency, high-volume data, event and transaction management. Unlike disk-optimized relational databases such as the Oracle database, DB2, Informix, and SQL Server, Timesten's data is located entirely in memory; no disk I/O is required for query operations. As memory is faster than hard disk, Timesten is used in applications where Service level agreements require very fast and predictable response time, such as network equipment, telecommunication, real-time financial services trading applications, and large web applications. Unlike custom-built memory structures such as Hash tables, Timesten is a relational database that is accessed with standard ODBC and JDBC, providing the rich functionality of the SQL query language.

This study is to help the public administration of acceptance and evaluation and documentation to improve the database performance, reducing the memory and CPU requirements and to eliminate the response time of the query.

The result of implementing Timesten in oracle database, is bringing the admission data closer to the application, and processing queries in an in-memory Relational Database Management System (RDBMS), which reduces response time significantly. By offloading some of the data processing work from the database server, it improves overall throughput.

ملخص الدراسة

Timestenعبارة عن قاعدة بيانات علائقية منتجة بواسطة شركة اوراكل. Timesten تم تصميمها لتقليل فترة الانتظار، وحدة التخزين العالية وادارة الحدث والعمليات. على خلاف النظم التقليدية لقواعد البيانات مثل قاعدة بيانات اوراكل، DB2،Informix و SQL Server ، قاعدة بيانات Timesten مخزنة فى الذاكرة وبالتالى ليس هناك حاجة للوصول الى القرص لعمليات الاستعلام. ولأن العمل مع البيانات الموجوده في الذاكرة، أسرع بكثير من الكتابة والقراءة من نظام الملفات ، فإن قاعدة بيانات Timesten تستخدم فى التطبيقات التى تتطلب سرعة استجابة عالية مثل معدات الشبكات، الاتصالات،تطبيقات الخدمات المالية والتجارية وتطبيقات الشبكة العنكبوتية الواسعة. تختلف قاعدة بيانات Timesten عن الذاكرة المبنية على حسب الطلب فهى نظم معلومات استدلالية متصلة بنظامى ODBC و JDBC كما توفر كم هائل من وظائف لغة الاستعلام (SQL).

هذه الدراسة تهدف لمساعدة الإدارة العامة للقبول وتقويم وتوثيق الشهادات على لتحسين أداء قواعد البيانات ، عن طريق الحد من متطلبات الذاكرة ووحدة المعالجة المركزية وتقليل زمن استرجاع البيانات.

نتيجة لتطبيق Timesten فى قاعدة بيانات اوراكل تم تخزين البيانات ومعالجة الاستعلامات فى الذاكرة وقد قلل ذلك من زمن الاستجابة بصورة واضحة و تفريغ بعض أعمال تجهيز البيانات من خادم قاعدة البيانات، وحسن فى اجمالى عملية المخرجات.