Comparative study of performance of RDBMS: SQL Server and DBMS: FoxPro

ABSTRACT

Nowadays data is just like assets in organizations. Data allows organization to determine the reason of problems. Organization can make decision based on data. Database management system has been used to store, organize, process and retrieve data But many DBMS system available in the market have some limitations in terms of complexity, security, performance etc... This paper covers a comparative study on the performance of DBMS like FoxPro and RDBMS like SQL Server by testing some queries, complex queries at different level.

Key words: *DBMS, RDBMS, FoxPro*

INTRODUCTION

A Database Management System shortly known as DBMS is software that is used to store, modify, retrieve and querying data from a database. From a small startup firm to the multinational companies and industries managing a huge amount of data becomes a mess. So, the software like the DBMS brought a revolution in many fields regarding efficient information management. For Example college management database organizes the data about students, faculty, and admin staff etc through which we can retrieve, insert and delete data from it. FoxPro, MySQL, Oracle, MS SQL Server, MS Access, etc. are very well known commercial DBMS and RDBMS used in different applications. Some different queries tested at different level to check the performance issues in FoxPro and MS SQL Server.

FoxPro

Visual FoxPro is good option for small networks which having very limited number of users around 40 to 50. FoxPro is using File–Server application that was introduced on the DOS and Windows operating system. It allows you to work with several logically related tables of data. It was originally developed by Fox Software in 1984, but later the company merged with Microsoft. FoxPro was included as part of Microsoft's Visual Studio. However, it doesn't have security factor.

MS SQL Server 2008

MS SQL Server 2008 is a relational database RDBMS management system developed by Microsoft. Like all other RDBMS, SQL Server supports ANSI SQL, the standard SQL language. However, SQL Server also contains T-SQL, its own SQL implementation. SQL support some basic function to high level features like business intelligence, database mirroring, log shipping, fail-over clustering. According to Microsoft SQL Server is highly used database in the world.

Comparison between FoxPro and SQL Server

Parameters	FoxPro	SQL Server
1.Performance	SQL Server is a client/Server database. It means SQL Server reduces network traffic by by processing database queries on the server before sending only the requested data to the client, not the entire table	FoxPro returns the entire table to the memory of the local client
2. Security	Microsoft provides maximum level of security in many ways like giving permission such as Grant and Revoke- users can be given only restricted access to the data and protect the data from modification and other operations, by creating user accounts such as windows authentication and SQL server authentication, they can separate the users with different logins	With FoxPro, data is stored in Flat files on a file server, network security is almost nothing If user will be having right to access the data, they can add, modify or delete the information
3. Recovery Mechanism	SQL Server is a transactional database. Transaction means a unit of work performed within a database and one transaction treat as independently from other transactions. Transactions can be rolled back if they are not completed properly.	FoxPro does not support unit of work in a transaction, which can result in data integrity problems
4. Automated Scheduled Backups	Microsoft SQL provides for automated scheduled backups under three different recovery models	A database administrator must remember to manually back up FoxPro databases.
5. Automatic Indexing	SQL Server is able to automatically re-index the database at scheduled intervals.	It is necessary you manually re-index a FoxPro database daily.
6. Distributed Database	It supports distributed database	It doesn't support distributed database
7. Data capacity	SQL Server handles large amount of data and supports multiple users.	FoxPro is meant to be for small organization and deal with small data. It supports single user.
8. Normalization	Normalization is present in SQL Server	Normalization is not there in SQL Server

Performance Test

Query	FoxPro	SQL Server
To show records	LIST-Show all records LIST FOR STDNAME='Raj' (Show only record related to Raj) LIST FOR ROLLNO>80 (Show records which rollno is greater than 80) LIST STDNAME,ROLLNO FOR PIN=360007 (Show records with field stdname and rollno with pin=360007	SELECT * FROM EMP-Show all records SELECT DISTINCT DEPTNO FROM EMP-show uniqe deptno values from emp table SELECT * FROM EMP WHERE CITY='Rajkot' (Display all fields of Emp table who belongs to Rajkot city) SELECT EMPNAME, SALARY FROM EMP WHERE EMPNAME LIKE 'S%' (Display employee name and salary from Emp table but employee name must be start with 'S' letter.
JOIN Query	Not possible	SELECT columns FROM table1 INNER JOIN table2 ON table1.column = table2.column Like above left outer join, right outer join and full outer join is also possible
Nested Query (Sub Query)	Not possible	SELECT DEPTNO,DNAME FROM DEPT WHERE DEPTNO NOT IN(SELECT DEPTNO FROM EMP); Display those deptno who are not having any working employees

CONCLUSION

Purpose of this paper is to show the different performance of DBMS as FoxPro and RDBMS as SQL Server by executing many queries. So our result shows that SQL Server provides better environment and features for data management. Data warehouse, database mirroring and log shipping are special features which comes with SQL Server and not possible in FoxPro.

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