Am I Ready? Using a Database to Enhance Your Business Performance

SQL Webinar Questions and Answers
Thank you for your interest in the “Am I Ready? Using a Database to Enhance Your Business Performance” webinar. Below are the questions and answers.

Q: What happens if we don’t implement our DB correctly?
A: A poorly implemented database will not be able to use the hardware resources you allocate for it efficiently.

This can lead to business impact due to inability to meet requirements as proposed due to wasted resources.

Also, if you setup the database and implement the code correctly, you could still have implementation issues with not selecting the proper level of hardware resources.

Q: What are the symptoms of a poorly architected DB?
A: Most of the time the initial load on the DB and server aren’t sufficient to show obvious symptoms until the project has ramped up to the point where the hardware is no longer able to cover for the extra work it is doing because of poorly implemented code. This can cause the gremlin effect, where issues seem to be random and appear out of nowhere. Some things that can push a DB to the edge are running reports on terms that aren’t indexed properly, a seasonal rush that increases traffic and load, adding additional reporting functions to a server that use up resources and impact performance. Generally, slow load times, time outs, and general sluggishness of the web site or application that is relying on the DB are all symptoms of different problems.

The first step most take is to throw more hardware at the issue, this can work but if you are on a budget it can sometimes be off the table.

The first step should first be an investigation of the hardware the DB is running, ensure sufficient RAM, Sufficient processing power, and sufficient Disk speed, an investigation of the network is also merited if the DB is accessed over an Ethernet LAN or WAN.

Once networking and hardware are judged to sufficient for the task, a thorough investigation by an experienced DBA(Data Base Administrator) can find any issues with the code and make recommendations that can improve performance.
**Q:** In a web application where a single database supports multiple customers, what is the licensing model for a hosted database where each customer has a different DSN to access the data to segregate the data based on user login?

**A:** This is licensing, so Sarah may be able to correct any misimpressions I have, but I don’t think they need anything other than a simple processor license under 2008 or sufficient core licenses to license the physical server under 2012 licensing.

**Q:** I am currently using MS Access, why should I move to MS SQL?

**A:** MS Access,

Access is more suited for desktop use with a small number of users accessing it simultaneously. People are more likely to have Access on their desktop computer than SQL Server. You'll generally only find SQL Server on developers' computers/servers or on production server machines.

Another reason you might use Access instead of SQL Server is money. You might already have installed Access as part of the Microsoft Office suite. Purchasing SQL Server would be an extra expense that may not be necessary - depending on your situation. SQL Server can also be quite expensive.

**MS SQL,**

SQL Server is a more robust database management system. SQL Server was designed to have many hundreds, or even thousands of users accessing it at any point in time. Microsoft Access on the other hand, doesn't handle this type of load very well.

This makes SQL Server perfectly suited for database driven websites. You should never use Access for a database driven website - unless it has a very small amount of traffic (like you and a few of your friends). Even then, you may find yourself getting errors due to multiple users trying to access the database at the same time.

SQL Server also contains some advanced database administration tools that enable organizations to schedule tasks, receive alerts, optimize databases, configure security accounts/roles, transfer data between other disparate sources, and much more.

**Q:** What does it take to go from a MYSQL based DB solution to a MSSQL solution?

**A:** To move from a MySQL to MSSQL solution a customer will need to make update their application to make sure that it support MSSQL. There are many products on the market to help a customer migrate to SQL Server. A company like Data Berry would be a good place to start.
Q: How are availability groups different from the clusters I am familiar with (cluster under Server 2008, 2003)?

A: Availability groups operate at the database level, whereas clusters protect at the hardware level. One of the benefits of Availability groups over clusters is speed of recovery. In the event of a failure, an availability group failover will be instantaneous where as a cluster can take 10 or minutes to recover. Availability groups do not require shared storage so customers should plan for additional storage requirements.

Q: Could you go into more detail about the requirements for purchasing the BI edition of MSSQL 2012?

A: BI Edition can be purchased from hostway, but in addition to licensing on a per processor basis. The customer must also license using server access licenses.

Q: Do you see any problems using Access as a front end to a web based SQL database?

A: Access is great front end for SQL Server, especially for access databases that have outgrown the limitation of Access and need a more robust data platform like SQL Server. Within Microsoft Access, you can upsize your database to a SQL Server without having to make changes to the Access database.

Q: We provide our software as a service to multiple clients - each client has a private database under a single schema. Would you recommend using individual SQL Server instances for each customer, or running a single instance for all customers, and why?

A: SQL Server 2012 is an excellent multi-tenant solution. You could run a single instance of SQL Server and provide multi-tenancy at the database level with contained DB, which isolates databases on a single instance. The resource governor features allow you to control behavior of each database to prevent a noisy neighbor from taking too many resources and impacting the performance of other databases on a single server.

Q: How can I speed up my DB without throwing hardware at it?

A: Here is a general answer. To be more helpful we will need a server and system analysis:
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- Designing Federated Database Servers balancing the processing load across multiple servers. (Yes could be hardware or VM's)
- Database Design tables and constraints physical attributes such as disk systems, object placement, and indexes
- Query Tuning correct design of the queries used by an application can significantly improve performance
- Application Design correct design of the user application can significantly improve performance. Application design includes transaction boundaries, locking, and the use of batches.
- (Microsoft SQL Only) Optimizing Utility and Tool Performance utilities and tools supplied with Microsoft SQL Server 2000 can highlight ways in which the performance of these tools can be improved, as well as the effect of running these tools and your application at the same time.
- Optimizing Server Performance settings in the operating system (Microsoft Windows NT®, Microsoft Windows® 98, or Microsoft Windows 2000) and SQL Server can be changed to improve overall performance.

Q: Do you joint development of projects where Databerry does some of the work and the client does some of the work?

A: Yes, this is common problem where the customer isn't directly involved with their project and there is usually always an issue with the project because of that reason. so we are delighted when a customer gets involved with their project. This is case regardless if they are a developer/DBA or none developer/General Business/Marketing type customer.