Why you need DBA Support
Executive Overview

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WHY YOU NEED DBA SUPPORT

There seems to be patterns and cycles in everything. Application development is no exception. For a variety of reasons, organizations of all sizes frequently end up without a DBA.

Lack of a DBA will put organizations at <u>risk</u> in a variety of ways:

- Performance issues, slowly snowballing (or suddenly escalating) until they are intolerable
- Phases of development which become increasingly difficult because the design of the data model did not lend itself to flexibility
- Database corruption, system crash, or other disasters, often to find out that there is no backup, or nobody who knows how to deal with a system down issue
- When your production database goes down, your business stops
- … or a hundred other scenarios

Here, in no particular order of importance, is a *Letterman-esque Top 10 List* of the reasons that you need a DBA or DBA managed support services:

Preventive Maintenance

Servers and databases need to be properly maintained. When they are not, performance degrades, database consistency is at risk, and cleanup of ancillary processes (for example, growth of the database log) doesn't occur; it can take a while, but little things can fill up disk subsystems and cause database management systems to halt.

Application Performance

Do you know how to identify what application components are running slowly? When users call and complain about performance, where do you look? Where are the bottlenecks? Is it CPU, memory, disk, network? Even after you've identified the component, what is causing the CPU to spike? Answering these questions can be… nontrivial. A common mistake here is to "throw hardware at the problem," which will not help, may or may not mask the problem for a short period while it snowballs out of control.

Disaster Recovery

Do you have a disaster recovery plan? You're probably performing backups. When is the last time you tested the restoration procedure? I've had more than one new customer retain me just because the restore didn't work. Did you know that a DBMS can give you point-in-time recovery? Just because somebody deletes a table may not mean it is gone forever, if you plan properly.

Device Management

We tend to treat IO as a bottleneck. How do you maximize throughput? There are a variety of DBMS resources that require frequent IO, including data, logs, indexes, and even to the DBMS executable itself. How are you going to balance the IO across your devices? What are you going to do when your SAN administrators tell you that the SAN is not being stressed, but your DBMS is telling you that there is an IO bottleneck? This happens too often.

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TOP 10 CONTINUED

Predictive Analysis

When do you need to buy more disk? CPU? Upgrade your hardware? If you're not measuring / monitoring database growth and a dozen other factors, while managing performance (so that you don't get false reads), you simply don't have any way to plan.

Physical Architecture

What makes more sense for you? Clustering? Warm standby replication? Balancing your workloads across multiple machines? Consolidating your servers? These decisions need to be based upon facts, knowledge of your business requirements, and experience. If you don't have a DBA on staff, or have DBAs in a support model, then you won't know the right way to respond.

Application architecture

DBAs are great resources when you start to design your application flow. How are you going to bring data together from disparate data sources? How aware are you of your real-time and batch options? How many have you direct experience with?

Business continuity

We recently read a statistic that stated that over 60% of businesses fail after catastrophic data loss. Where were you when the hurricane hit your data center? Worse, where was your data, and how did you continue to function? You need to plan, long term, for hurricanes, fires, floods theft, and other flavors of disaster.

Hardware Performance

When ordering your server hardware, you need to know what the DBMS performance has been over time; you need to know which performance spikes are aberrations and what is normal; you need to know how to maximize the throughput throughout your bottlenecks, by fine tuning cache or other physical resources. Without a DBA, you just won't know.

Developer training

An oft-neglected but badly-needed area of DBA work is the mentoring of developers, who, as a group, have a very high aptitude for logical coding, but often do not have training in database performance. This often leads to passed user acceptance testing, with significant performance issues at rollout. Worse, the performance issues tend to snowball, as the poor code often propagates.

Summary

This short-list of critical DBA activities requires dedicated support. A developer who is a part-time DBA, even with sufficient background, usually won't have sufficient time to perform these tasks.

Whether you go with a full-time DBA or managed DB support services, make sure you have adequate expertise at hand.

About the author:

Jeffrey Garbus is a database consultant and the CEO of Soaring Eagle Consulting, Inc., based in Tampa, Florida. He has over 20 years of experience consulting, tuning, and training on the Microsoft SQL Server. He has spoken at user conferences, and has written many magazine articles and books. He is also the lead author for *Jeffrey Garbus' Official Sybase ASE 12.5 Library*, which includes *Sybase ASE 12.5 Performance and Tuning* and *Sybase ASE 12.5 High Availability, and his latest,* Microsoft Transact - SQL, The Definitive Guide.

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