

The Challenges of Database Management

White Paper

By



Executive Summary

The database sits at the heart of an organisations' IT systems. With the need for 24/7 availability increasing, it is vital that databases are optimised, monitored and maintained efficiently and effectively.

This paper aims to highlight the key challenges faced by IT organisations in maintaining their information management systems and the solutions to these challenges. In particular it focuses on the management of DB2 databases for both midrange and mainframe platforms.

The challenges of database management

Cost – With the current economic slowdown, IT budgets are static or reducing. The need to be more efficient and “do more with less” is increasing. Although software and hardware costs are falling, people costs are not and continue to consume an increasing proportion of the IT budget. This is especially true for highly skilled staff such as database administrators.

The need to be more efficient and “do more with less” is increasing in the current economic slowdown.

DBA talent – Organisations are struggling to attract expert DBA talent to ensure continuous availability of their mission critical production databases. The downtime cost for such databases is often very high. DBAs are now specialising in different areas such as performance, data warehousing, application support, etc. It is becoming very hard to find an experienced DBA with expert knowledge in all areas of a database management system.

Keeping up-to-date – it is increasingly difficult for DBAs and the organisations they work for to keep up to date with the latest database technologies. Database software is becoming more complex and takes years to master. Training is not only costly in terms of the price but also in time, with key DBA staff needing time out of the office.

Proactive vs Reactive – DBA's are often caught up in different projects or need to spend time on non-core functions which means that the vital monitoring and management of the database has to be sidelined. Overworked DBA teams may not have time to proactively monitor the database. Instead, only reacting once a problem has occurred and business users are already feeling the effects.

Cover – High availability is a common requirement for today's On Demand IT Systems . 24x7 database support cover requires a minimum of 3 DBAs. Even without a 24x7 support requirement there can be issues with cover when holiday, sickness or maternity and paternity leave is considered.

Database Versions – Sometimes customers are forced to stay on older, unsupported database releases. Skills for these older versions are hard to come by and lack of vendor support can mean a significant risk to the business.

Depending on the size of an organisation, DBAs are frequently being asked to take on more than just the traditional day to day management and monitoring of a database. In a recent survey by IDUG & CA the most significant database activity undertaken by DBAs during 2007-2008 was upgrading the current database management software version at 67%. Daily maintenance was 56%.

Particularly in smaller organisations (1-1000 employees); 31 % said they were primarily involved in database administration. This means that DBA's are being pulled into different projects, which is no doubt good for them as it brings new opportunities to learn and more interesting work, but on a day to day basis what is happening with the administration of the database? Are the DBA's being pushed to take on too much? In this case it might be that an additional DBA is employed to "fill the gap". However, is this really the most cost effective solution for the business?

The key question is – How can we maintain successful management of our databases whilst keeping maintenance costs down?

Grow your own DBA?

Many organisations have tried investing time and training into individuals and creating a DBA team from the ground up. Whilst this has clear benefits, the costs of time and training can be high. Attrition is also an issue with newly trained DBAs looking to move on and organisations losing their investment. Even when they find a replacement, the situation will reoccur especially if your organisation:

- Cannot compete with the bigger companies who have the financial means to keep hiring away the DBAs.
- Is geographically located in an area that has a major impact on your ability to hire and retain talent. Some parts of the country have a much more intensive need for database administration talent than others.
- Does not provide sufficient technical challenges to keep your DBAs motivated.

Not having a steady DBA resource available to your business puts your business at real risk.

Database Monitoring Tools

Monitoring software, whilst providing reporting facilities, doesn't provide the personal interpretation and expertise of a database specialist. Monitoring products alone just don't solve the problem of good database administration. The advantage of a remote DBA service is in having access to people, process and also technology. It's the combination of the three that solve database problems. A better strategy for most companies is to leverage the resources of Remote DBA vendors, for whom maintaining the most state-of-the-art tools makes sense. Plus, precisely because Remote DBAs focus on database management, they maintain sophisticated competency in the optimal use of new software.

Remote DBA

Outsourcing some or part of your DBA functions could be the answer.

A Remote DBA service costs about 40 percent of a similar level of service in-house.

The benefits of using a Remote DBA service include:

Cost – Studies show that a Remote DBA service costs about 40 percent of a similar level of service in-house (dbta.com). A Remote DBA service can leverage a shared skill pool and can thereby offer support more cheaply, saving organisations a substantial amount annually. The flexibility of a remote service allows an organisation to buy only the services they need according to their internal SLAs. This is especially cost effective for smaller organisations that are unable to support a full time internal DBA.

Full-time cover – A Remote DBA service proactively monitors an organisation's production databases 24x7, 365 days a year ensuring minimum downtime. There are no DBA absences due to holidays, sickness or maternity/paternity leave to worry about.

Expertise – The Remote DBA service staff are highly qualified and certified database experts. By hiring the services of recognized database experts provided by a Remote DBA service, organisations avoid the additional costs of having to keep DBAs trained in the latest software capabilities.

No attrition – With a Remote DBA service, the whole vicious cycle of attrition and the problems arising just disappear. IT managers can have peace of mind knowing that the Remote DBA staff have intimate knowledge of the organisation's technology which is kept confidential and there is no repeated training of DBAs involved. Furthermore, in cases where organisations only have a single DBA, the risk of entrusting all the organisation's databases to one person is mitigated.

Better utilisation of internal DBAs – A substantial amount of a DBA's work is spent on rudimentary, repetitive, administration tasks. Most of the time, DBAs are busy fighting fires rather than proactively preventing them. Outsourcing routine monitoring and maintenance to a Remote DBA service allows organisations to better utilise their internal DBAs by allowing them to focus on more strategic, development projects.

What to look for from a Remote DBA provider

Cost – Make sure that the service is cost effective for your business needs. How much does the service cost vs the cost of your DBAs?

You can't predict how many hours or calls you're going to need. Check whether there is a limit to the number of service calls/number of hours you can use. What seemed like a good deal initially can end up being more costly than you imagined if you have to pay for extra calls or time.

Looking for a supplier who can provide proactive monitoring means that you don't have to worry about customers experiencing application outages before you know about them.

Skills – Does the provider have the relevant skills? Many companies offer a managed services solution for your IT systems. The key though is finding the organisation with the specialist knowledge of DB2 so you can be sure any issue that arises can be quickly and professionally dealt with.

Cover – Be sure to find a provider with flexible packages which give you the support and cover you need. Perhaps you only want cover out of hours because your in-house DBA team can cope with the day to day management. Or perhaps your system needs the assurance of 24/7 support.

Proactive vs Reactive – Not all service providers can give proactive support. Looking for a supplier who can provide proactive monitoring means that you don't have to worry about customers experiencing application issues before you know about them.

Triton's approach

The Concept

Triton's Remote DBA service is built on 3 key pillars:

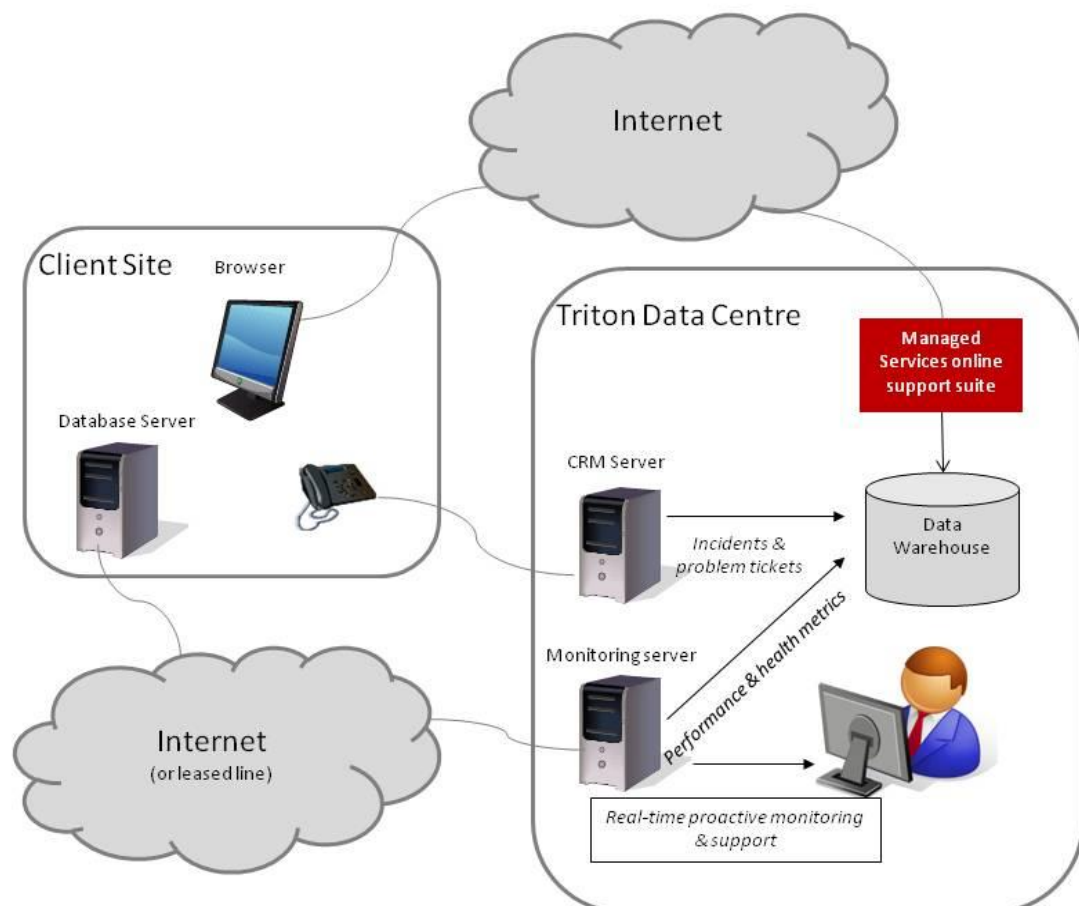
1. Cost effectiveness
2. Unlimited support
3. Continuous, proactive monitoring

Cost effectiveness - Highly skilled DBAs are an expensive resource – make sure they are spending their time on work which will develop organisational performance, leaving the tedious day to day maintenance to someone else. Triton's Remote DBA service leverages a shared skill pool with industry proven tools and can offer Remote DBA support cheaper than having an expensive full-time DBA. With Triton's Remote DBA service, you buy only those DBA services you require and only at the levels you require them

Continuous, proactive monitoring – 24/7 cover which is proactive – so you know there is a problem before your users do. Triton's Remote DBA service uses industry proven monitoring tools to make sure your databases are running optimally.

Unlimited support - 1 call a month or 100 calls a month. The cost and cover stays the same. This gives our clients peace of mind knowing that they can use the Remote DBA service as much they like without incurring additional (at times hidden) costs.

The Architecture



Remote DBA Infrastructure Explained

- Secure connectivity to client databases using dial-in/VPN/ADSL/etc.
- On-line client access
- Web portal that provides clients with up-to-date statistical information on the database environments we monitor.
- Ensures continuous communication with clients

Experts always on hand

Clients have access to the Triton dedicated 24x7-support infrastructure, always speaking to a fully trained and experienced professional. All contracts are tailored to each customer's requirements, thereby offering the flexibility and scalability you need to meet your business requirements.

Access to the online support portal allows clients to view regularly updated system reports.

Key features

- Continuous proactive monitoring and intervention, based upon industry-leading systems management solutions
- Access to Triton's dedicated managed services portal, allowing clients to view critical performance and availability metrics for their systems in real time
- 20 hours which can be used for consultancy, development work, or training (remote DBA only)
- Status Reports, and regular communication
- Tiered service levels to suit your business requirements
- Support to suit your requirements, from business hours only to 24 hours a day, 7 days a week, 365 days a year
- Unlimited support calls to a dedicated telephone hotline
- Defined support escalation response time
- Dedicated Technical Account Manager
- Individualised, and customised contracts
- Fixed costs, agreed in advance, for any work required over and above the level of cover required.
- Support for previous versions of software - even those no longer officially supported by the vendor.

Flexible Cover Options

Service Level	Hours Of Cover	Guaranteed Response Time Options	Typical Usage
Full-Time Companion	24 hours a day, 7 days a week, 365 days a year	1 or 2 hours	High-availability mission critical systems
Working Companion	9am – 5pm weekdays (no cover weekends or bank holidays)	1, 2 or 4 hours	Systems with lower availability requirements
Out-Of-Hours Companion	5pm – 9am weekdays, plus weekends and bank holidays	1 or 2 hours	Supplementing in-house DBA team support rota

Summary

As IT budgets get tighter, a move toward Remote DBA support services is becoming an attractive option not only for organisations that are finding it difficult to replace their DBAs, but also smaller organisations that cannot justify the cost of a full-time DBA.

A Remote DBA solution not only makes sense from a financial perspective, but also from an operational and team perspective. The tedious day to day tasks are handled by a Remote DBA service while the internal DBAs can be working on projects which will help improve business performance – a win win situation!

About Triton

Triton Consulting are information management specialists. The company's team of consultants represent some of the most highly experienced and qualified in the industry, and are able to advise on the full range of IBM Information Management solutions including DB2 for z/OS, DB2 for LUW, IBM Information Server, IBM Content Manager, IBM Content Manager OnDemand, Document Manager, Record Manager, DB2 Connect and most recently IBM Optim Solutions. The company was set up in 1996 and became a Premier Business Partner of IBM in 1998.

www.triton.co.uk