

Cost-Effective Alternatives for Supporting Mission-Critical Oracle Databases

Goal and Audience: Solutions for IT Directors, CIOs, and CTOs

The purpose of this paper is to aid key information technology (IT) executives who are involved in making day-to-day and strategic technology and business decisions. Typically, you are in charge of or have input on IT, Software Engineering and Support, or Operations. You are in the important role of overseeing the company's mission-critical data, and you have wisely chosen Oracle technology for the reliability, scalability, and availability your organization needs.

However, finding a cost-effective solution, that still maintains the high level of expertise and support you need to administer your Oracle systems is an ongoing challenge. If you are like many IT executives, you have chosen to either:

- (a) Attempt to hire and retain an experienced, yet high-priced Oracle database administrator (DBA) to manage the system; or
- (b) Assign an inexperienced staff member (or perhaps a developer) as a part-time DBA.
- (c) Resourced your production support to a firm providing remote DBA services.

Our goal is to address some of the most common challenges facing IT executives in managing their Oracle systems, and to survey potential solutions to alleviate the strain and increase both business and technical performance.

Introduction: Is There a Better Approach to Supporting Your Oracle Systems?

IT executives have seen an explosion in the amount of data their companies must store and manage, increasing the administration burden and the pressure to make sure data and systems are properly supported. Because managing these database systems is critical to the success of the company as a whole, you are increasingly looking for solutions to better support your production environments.

Without proper support and maintenance of your Oracle systems, your company may be faced with:

Challenge	Description of Consequences
<i>Increased database downtime</i>	This can bring an entire business to a halt. Though effects vary from company to company, downtime often results in lost revenue and customers, time-intensive repairs, and potential loss of critical business data.
<i>Increased DBA turnover and training costs</i>	According to a recent <i>CIO Magazine</i> survey, employee retention and preventing burnout was the #1 concern reported by CIOs in regards to their IT staff (see Exhibit 1 below). The increasing pressures placed on DBAs can result in increased employee turnover and subsequent training costs.
<i>Decreased database performance</i>	Performance issues can cause an array of undesirable issues, from significantly reducing a company's productivity, to customer complaints, and ultimately to loss of customers and revenue.
<i>Overburdened IT staff</i>	There is only so much any team can handle. An overloaded IT staff may not have the time to properly support the mission-critical database systems, and staff DBAs may not have as much time to work on special projects or take proactive measures to ensure optimal database performance. This strain may hurt your ability to get the reliability and performance needed from your database systems.

Table 1: Consequences of the understaffed and overstretched IT department.

Today you are facing a perfect storm of factors that are making your job increasingly difficult. There is more work to do than ever before without the budget or resources to do it. In an October 2006 survey conducted by *CIO Magazine*, 66% of respondents reported their departments as understaffed, up from 59% the prior year.

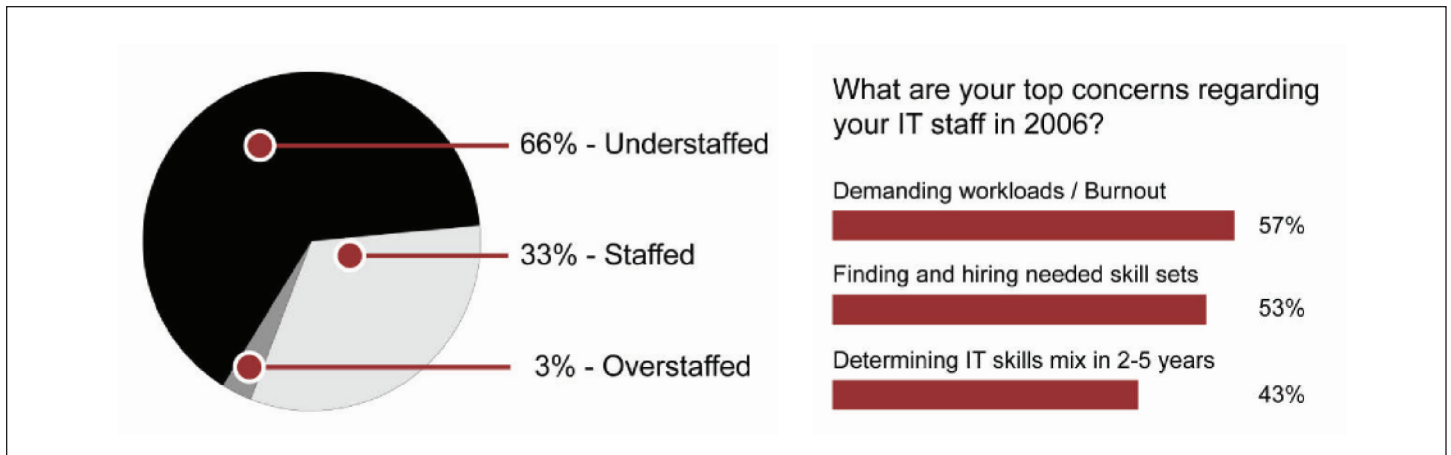


Exhibit 1: CIO Magazine Survey revealed that staffing and burnout are top priorities for CIOs.

This staffing strain combined with the increasing amount of time needed to manage and support databases has resulted in numerous costly and challenging problems.

Protect the Core of Your Technology Infrastructure— Protect Your Oracle Database

A Better Approach

Data acquisition, storage, analysis, and retrieval requirements have exploded in recent years. This explosion is placing a heavy burden on your company to ensure data integrity, high availability, and scalability. With data being central to every business decision, the Oracle database is at the core of your technology infrastructure and it must be protected around the clock.

With an understaffed and overstretched IT Department, the potential for burnout is at an all-time high while the demand for qualified DBAs is on the rise.

Finding the right level of expertise, support, and cost-effectiveness for database administration is an ongoing challenge for any company using Oracle technology. We have found that the myriad of technology and business issues are all too often forcing IT executives to either:

- (a) Dedicate one or more high-priced and experienced Oracle database administrator(s) (DBAs) to the system; or
- (b) Assign an inexperienced staff member as a part-time DBA.

Because managing your database system is critical to the success of your business, you are increasingly looking for solutions to better manage these environments. IT executives are now choosing a third option—

- (c) Partner with a firm that specializes in Remote Database Administration (Remote DBA) or managed services.

Vendors and customers generally view Remote DBA services as outsourcing a core service. Database Specialists views this type of service as “Resourcing.” Our intent and approach is substantially different than Outsourcing. Outsourcing is where you often relinquish control and day-to-day responsibility of your database systems to a third party provider. With Resourcing, we are acting as your resource partner—an additional resource and extension of your technical team.

By developing a partnership with a well-respected Remote DBA services firm, you can augment your team with a firm that provides you with the services of highly qualified, certified, and hands-on Oracle professionals. These technical experts work side-by-side with your staff in any number of capacities such as part-time, high demand/overflow, vacation, and full-time. Just as with full-time employees, the right partner working with your company gets to know your team, mission, clients, and IT infrastructure. They focus on what they do best—maximizing availability and performance while guiding your organization on database, technical, and strategic issues.

Remote DBA services offer substantial technical and business benefits (see below). Example technical benefits include:

Technical Benefits	Description of Benefit of Remote DBA Support
<i>Improve uptime, system availability, and performance</i>	<ul style="list-style-type: none"> • Enable 24x7 coverage of your mission-critical database systems • Identify problems requiring immediate attention and changes that may require future attention. • Suggest ways to scale and improve your IT infrastructure with approaches, processes, and technology.
<i>Broaden your resources with access to outside expertise, training and tools</i>	<ul style="list-style-type: none"> • Help reduce time to complete tasks due to the high level of expertise provided. • Transfer knowledge to your staff with constant communication. • Use state-of-the-art monitoring tools and processes without buying and implementing software products internally. • Offer professional development, mentoring, and training to your team.
<i>Proactively manage your database</i>	<ul style="list-style-type: none"> • 24x7 systems monitoring with regular reviews and reports to manage and maintain your databases. • Collect database metrics to allow for accurate trend analysis and capacity planning efforts. • Avoid performance issues with proactive problem solving
<i>Access to senior DBAs</i>	<ul style="list-style-type: none"> • Increase depth of coverage with highly qualified, certified, and hands-on Oracle DBAs that average 10+ years. • Augment the capabilities and technical depth of your IT team.

Table 2: Technical benefits of choosing the right Remote DBA Resourcing partner.

With the rise in popularity of Remote DBA services, vendor selection has become more critical than ever. The number of companies that claim expertise in Remote DBA services is expanding rapidly, both on and offshore, creating a wider gap in the quality of service provided.

Your challenge is to balance requirements with expertise and business value. The following sections offer insights and critical questions to ponder that will help you choose the right partner for your company's Oracle support resourcing needs.

The Right Remote DBA Service Provider Delivers Peace of Mind

As Option (c) becomes increasingly popular, IT executives are looking to Remote DBA specialists to augment their staff or to take over full administration with 24x7 support.

Remote DBA services have shown themselves to be cost-effective while offering solid business value to an organization. In the previous section, technical benefits were highlighted. In this section, the business benefits are described. Example business benefits include:

Business Benefits	Description of Benefit of Remote DBA Support
<i>Save money</i>	<ul style="list-style-type: none"> • Provide cost-effective DBA coverage, with savings of up to 65% over in-house staffing.
<i>Accelerate problem resolution and minimize downtime</i>	<ul style="list-style-type: none"> • Allows focus on the database and its role in your infrastructure. DBA responds rapidly and resolves open issues in a timely manner • Enables the DBA to be more proactive in finding solutions and preventing problems before they turn into costly expenses.
<i>Control expenses and headcount</i>	<ul style="list-style-type: none"> • Reduce downtime, increase performance, and decrease likelihood of needing additional consulting/support in the future. • Help smaller IT departments who need to augment their teams with additional and part-time support. • Cost savings over having full-time onsite employees, while increasing expertise and coverage • Reduce training costs as your resourcing partner provides this via mentoring Ramp up and ramp down based on your levels of support as your projects dictate
<i>More effective workload management</i>	<ul style="list-style-type: none"> • Protect against sick days, vacation, and employee turnover. • Manager better workload fluctuation, with additional resources available when you need 24/7 coverage.
<i>Decrease the burden on existing staff</i>	<ul style="list-style-type: none"> • Offload day-to-day tasks to allow existing IT and DBA staff to focus on issues requiring specific business knowledge. • Minimize need for consultants by freeing up internal staff to work on business projects. • Enhance morale and reduce turnover by returning your IT team members to their original roles and responsibilities.

Table 3: Business benefits of choosing the right Remote DBA Resourcing partner.

Choosing the Right Remote DBA Partner

It is important to understand the capabilities of the Remote DBA services firm that you select to support your company's mission-critical systems.

Not all firms are equal when it comes to delivering on promises for service levels, hours dedicated, background, and technical expertise.

In the table below on the next page, you will find 10 key questions to ask of a prospective Remote DBA services firm. We strongly recommend that you thoroughly examine the answers to these questions as well as answers to questions that are important to your company's goals.

Questions to Ask	Why is This Important?
1. <i>What is the level of experience of the team members providing support?</i>	Since this is your mission-critical system, ensure that the Remote DBA team has a minimum level of experience. We recommend at least 5-7 years of Oracle experience combined with thorough and proven remote hands-on trouble shooting experience. Also, senior DBAs should perform monitoring activities to ensure that larger issues requiring escalation will not arise in the first place.
2. <i>Will you work with specific professionals assigned to your company or will you be working with a "call center"?</i>	Receive the highest level of service with specific DBAs assigned to you. They will maintain ongoing familiarity with your systems. Without dedicated DBAs, there may be significant and unproductive time used to get new and inconsistent team members up to speed each time they become involved.
3. <i>Will you have a dedicated senior DBA on your account?</i>	A firm that provides you with front-line access to senior-level support will help you rest easy. Requests handled by a junior DBA and escalated to a senior DBA for major events take considerably longer to resolve than necessary.
4. <i>Is the firm located in the US or another country?</i>	Off-shoring may affect business hours that you receive services as well as the applicable laws that relate to managing your confidential information. In addition, ensure that communication style and methodology will meet your needs.
5. <i>What is the track record of the prospective firm? How long has the company been providing these services?</i>	You want the reassurance that the firm you work with is established, has long-standing customers and employees, and a proven reputation. Longevity is a sign that the firm has been successful in this line of work and their support of customers.
6. <i>Can the company provide references?</i>	Reading endorsements, reference letters, and talking to a firm's existing clients offers invaluable insights into how a prospective firm approaches technical and business issues.
7. <i>What is the process for database monitoring, notification, and resolution?</i>	Look for a company that uses state-of-the-art tools and applications for Oracle systems support. Otherwise, they may not be able to provide the needed ongoing monitoring. Some use packaged 3 rd party tools and others use proprietary tools. Proprietary tools have the flexibility to be enhanced based on your feedback and flexibility to monitor your customized metrics.
8. <i>Are the company's monitoring and maintenance tools available to you?</i>	A strong indication that the firm is highly qualified is its willingness to offer your team access to their monitoring and management tools. Often the better firms have client web portals with client histories and robust reporting tools. If this is of interest to you, you should ask for a demonstration of the tools during your decision-making process.
9. <i>What is the footprint of your monitoring and management tools?</i>	Monitoring tools have varying footprint requirements. Check with the prospective provider about the amount of resources and overhead consumed. Avoid purchasing additional IT hardware and software to compensate for the loss in system performance.
10. <i>What type of collateral and technical information do they make available on the web?</i>	Review resources such as white papers and installation guides available on the firm's website. These offer a view into the technical expertise, attention to detail, and communication style of the team.

Table 4: Key questions to ask before choosing a Remote DBA firm.

One of the best independent measures of a service's quality and dedication to its customers is the commitment that company shows to the larger Oracle community. Reputable firms typically provide free, informative resources for the Oracle community, and are frequent contributors at Oracle user groups and conferences. Specific materials to look for include white papers, installation guides and presentations that are relevant to your organization. Lack of this material may indicate a lower level of knowledge available to you and reduced knowledge transfer available to your IT staff.

Another foundation of a remote DBA service is the set of tools the firm uses. The tools, ease of use, and robustness provide insight into the quality and level of service you should expect from a Remote DBA resourcing partner. The type of metrics and performance areas that these tools monitor should be consistent with the best-of-breed independent monitoring tools and software available in the marketplace. This includes providing client access to these tools and the information that they gather and track. “Content is king” in this regard. Ensure that the tools focus in on the main areas that need to be monitored to maintain the level of service you require. Suggested areas to monitor include:

- Instance configuration parameters
- Messages in the alert log
- I/O and free space
- Tablespace sizing and configuration
- Redo log configuration
- Rollback segment configuration and contention
- Temporary tablespace configuration
- User configuration
- Session statistics
- Wait events and locks
- Latch statistics and contention
- Shared pool statistics
- SQL statement execution and performance
- Object sizing and storage

Determine the Right Approach: Finalize Your Decision

Your challenge is to balance requirements with expertise and business value for your mission-critical Oracle systems. Therefore, this paper provides insights and thought-provoking questions to help you choose the right technical support approach for your organization.

As discussed above, the three most common options available for Remote Oracle Database Support are:

- (a) Dedicate a high-priced and experienced Oracle DBA to the system,
- (b) Assign an inexperienced staff member as your part-time DBA, or
- (c) Partner with a firm that specializes in Remote Database Administration

IT Directors, CIOs, and CTOs are fast recognizing that DBA Resourcing with the right firm can offer substantial technical and business benefits. We recommend that you consider resourcing Remote DBA support for your Oracle database system.

About Database Specialists, Inc.

Since 1995, Database Specialists has been providing Oracle database consulting and remote DBA support in Solaris, HP-UX, Linux, AIX, and Windows environments through our DBA Pro service offering. We are committed to educating Oracle users and the broader IT community on how to best manage their Oracle production environments. In addition to this document, we have numerous presentations, tutorials, and scripts available without obligation at www.dbspecialists.com.

Our Oracle DBAs have 10+ years of hands-on experience. Many of them are featured speakers at Oracle OpenWorld and the Independent Oracle Users Group (IOUG). They frequently publish white papers and technical articles in publications such as *SELECT Magazine*, *Oracle Magazine*, the *NoCOUG Journal* as well as our own Monthly Publication—*The Specialist* (<http://www.dbspecialists.com/specialist.html>). Our dedication to knowledge sharing has been acclaimed by IOUG through *SELECT Magazine*.

Visit our website or contact David Wolff (800-648-0500 ext. 48) today to learn more about how partnering with us can make a substantial business and technical impact on your organization.

<http://www.dbspecialists.com>
(888) 648-0500 or (415) 344-0500

