Hitachi Data Systems

HITACHI
Inspire the Next

Get the Most Out of Your Oracle Investment ... for Less

Tailored Recommendations to Reduce Costs and Maximize Performance of Your Oracle Database Infrastructure

Hitachi Data Systems

HITACHI
Inspire the Next

More than 80% of the Fortune 100 trust solutions and services from Hitachi Data Systems to support their Oracle databases and critical applications.

While more than 400,000 companies[1] use Oracle databases and applications every day to run mission-critical processes and applications, infrastructure often becomes bloated and inefficient as the databases grow over time. That translates into service and performance slowdowns that hold your business back.

Teams that manage your IT infrastructure face big challenges: How can they deploy technology solutions that take maximum advantage of Oracle systems, from reducing costs to accelerating insights? And how can they ensure that day-to-day business activities continue uninterrupted? Failing to optimize your IT infrastructure reduces the ability of the business, and the ability of your users, to get the most actionable insights and value from your corporate data.

1. http://www.oracle.com/us/corporate/oracle-fact-sheet-079219.pdf

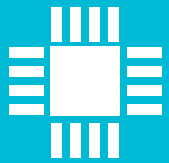
Understanding the current state of the infrastructure and the demands placed on it is critical, as is choosing technology solutions that will help achieve your business's goals. Clearing technological obstacles, improving productivity and maximizing your infrastructure's flexibility are the differentiators that will help your business achieve greater performance and flawless resilience, all with a lower total cost of ownership (TCO).

Over the past 20 years, Hitachi Data Systems has developed and supported IT solutions for many of the world's largest companies with the most demanding Oracle database environments. We have helped to identify and solve every kind of infrastructure challenge for Oracle users. The first step is to assess whether you are facing any of the three most common issues we have identified while working with our customers:

1. **Underutilized CPUs** and wasted storage capacity that increase your TCO.
2. **Database configuration issues** that result in poor application response times and lost user productivity.
3. **Legacy storage and compute systems** that cannot support cloud-enabled operations or provide continuous availability.

The good news is that there are solutions for the Oracle environment that maximize business value, enhance your progress towards greater business outcomes, and ensure that you continue to see great performance from your Oracle systems.

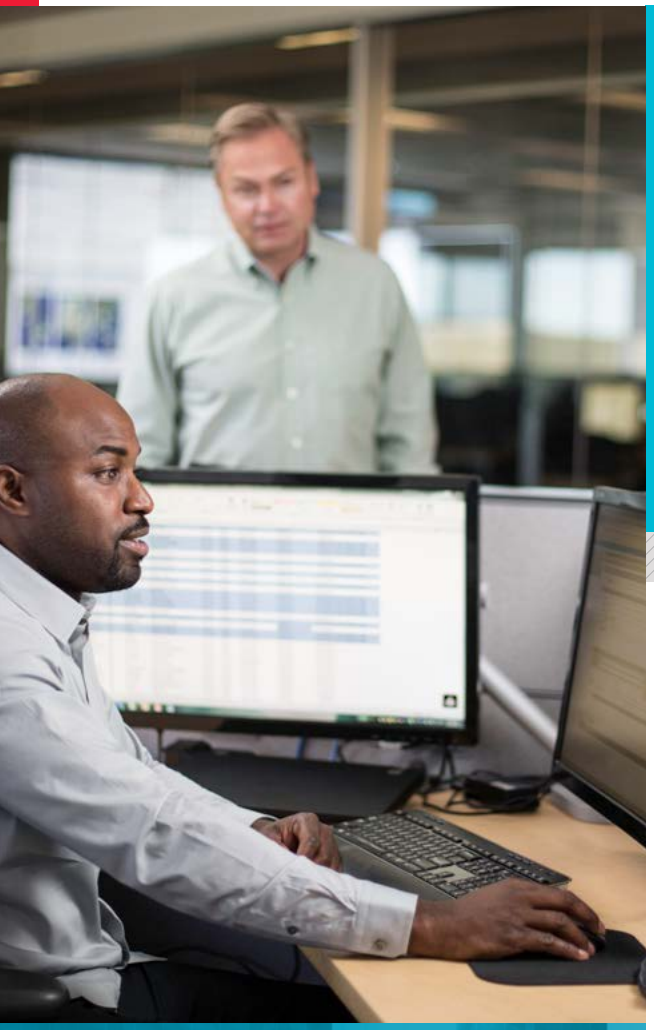
3 Most Common Issues

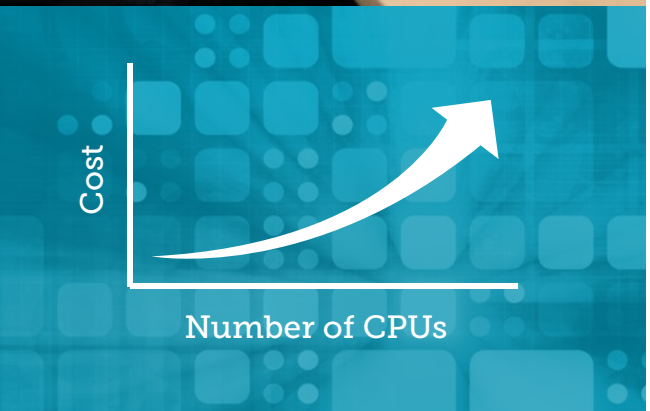


Underutilized CPUs and wasted storage capacity

Database configuration issues

Legacy storage and compute systems





1 Increase Infrastructure Utilization and Boost Your TCO

The explosive growth in data, combined with increasing demands for real-time insights, has made it difficult to predict how much compute power a business will need over time. The pressure to move quickly often leads organizations to overprovision. After all, it's better to have more power than you need than to not have enough, right?

What's the challenge?

Underutilized processing capacity isn't a performance problem. You won't see latency or reliability issues caused by overprovisioning CPU cores, and you won't hear administrators or application owners complaining about it. But if you're interested in controlling costs, and if you're responsible for infrastructure budgets, underutilized CPU could be your most troubling, and costly, issue.

Each additional CPU added towards addressing a lack of performance is costly: in capital expenditure for hardware, operating expenditure in the form of additional maintenance and support fees, and power and data center floor space. If software license fees are tied to the compute or storage resources supporting your Oracle environment, your application environment or both, your costs increase further.

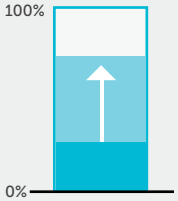
These may be acceptable and necessary costs to scale your infrastructure to meet increased performance demands or capacity requirements. However, in many cases, we have found that existing and even newly acquired compute and storage capacity is underutilized, squandering budget and other resources.

Hitachi Data Systems

HITACHI
Inspire the Next

"We often find customers' compute or storage utilization below 30%, even during peak performance demand. Ideally, utilization should be 70% to 80% at peak demand."

Pete Gerr, Senior Solutions Marketing Manager, Database and Data Warehouse Solutions, Hitachi Data Systems



Optimize CPU usage without adding cost

Explore Hitachi Data Systems solutions to improve utilization: Hitachi Unified Compute Platform 6000 for Oracle Real Application Cluster (RAC)

Get the Most out of What You Already Have

To optimize your Oracle infrastructure, you actually need to understand its current state and the performance you require for peak workloads and future growth.

Measure Your Utilization Rate at Various Times

You cannot fix what you cannot measure. Verified benchmarks give you the ability to identify opportunities to consolidate and optimize compute and storage utilization.

Consider Converged Computing

Converged infrastructure solutions integrate compute, storage and networking systems into an optimized platform, avoiding costly integration time and incompatibility issues.

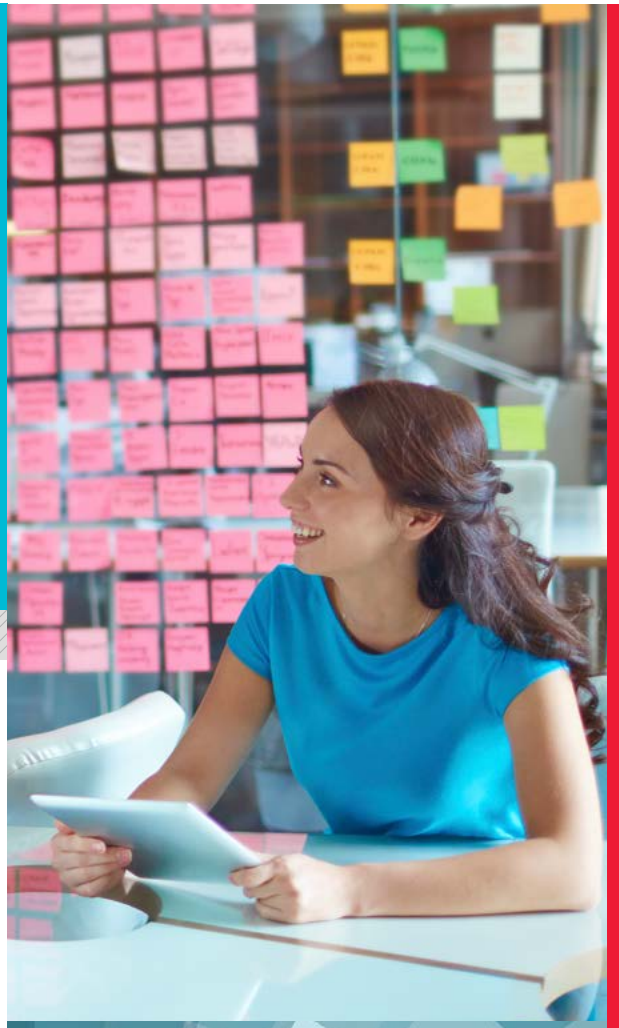
Converged solutions for Oracle databases should provide:

- Lower operational expenses (OPEX) through reduced need for hardware integration and administrative teams.
- A cloud-ready platform that enables policy-driven processes and simplified management.
- IT agility through faster implementation and time to production.

The collective benefits of the right Oracle converged infrastructure solution will directly improve your TCO by streamlining CPU performance and adding flexibility. Your business will gain the agility and flexibility it needs to achieve its goals.

2 Increase Database Performance and Satisfy Customer Demands

The ability of a system to respond to changes in a timely and cost-effective manner is essential in our rapidly shifting environment. In this real-time climate, your Oracle infrastructure must be flexible to react to unexpected challenges or new business opportunities. Every second matters to your customers, partners and employees. And to satisfy their need for speed, your business must continually drive down response times.



What's the challenge?

There's no faster way to bring real-time insight and business decision-making to a grinding halt than by serving up poor response times. For example, you may have bottlenecks in the system caused by a faulty process, or the inefficient use of shared resources that stop your end users from getting timely information. Impacts range from user complaints, financial penalties for missed service level agreements (SLAs) and, in mobile and Web-based applications, lost customers or potential revenue.

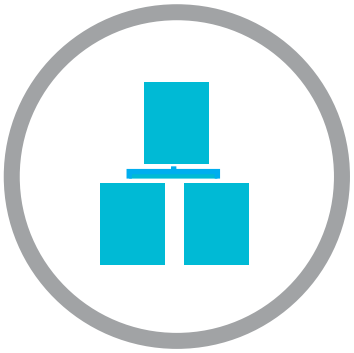
By helping our customers solve these challenges to achieve their business outcomes, we've found a recurring issue. Inadequate database performance leads to unacceptable response time. In our work with customers, we've discovered a common cause: Legacy infrastructures cannot keep pace with speed or business needs. In many organizations, the infrastructure in place was simply not designed to deliver today's performance requirements and SLAs.

The question to ask is straightforward: Can you make your database run faster on the same hardware? Or, does your infrastructure need additional CPU or storage capacity?

Business Agility and Speed Come From IT Flexibility

Your first step is to investigate and find out whether the cause of poor response times is related to a specific process or component, or whether your business has outgrown your infrastructure base. If it's a process issue, fine-tuning that process to your workload will help. If it's an infrastructure issue, you need to ensure that the infrastructure is fully supporting your Oracle environment and not holding your business back.

How the right Oracle converged solution gets you there:



Consolidate and virtualize complete storage solutions

Automate infrastructure management for operational efficiency

Optimize database and infrastructure performance

"As the number of databases in environments continues to grow, and the size of databases already being managed also expands quickly, many DBAs find they are now increasingly stretched to support the needs of the business ..."

Nik Rouda, Senior Analyst, Enterprise Strategy Group

Source: Hitachi Data Systems Knows How to Fix Your Oracle Database and Reduce Your Costs

Consolidate Your CPUs

Allowing more parallel processing will improve flexibility and response times. Converged solutions for Oracle that include symmetric multiprocessing (SMP) capabilities allow multiple CPUs to be quickly combined, delivering extra performance instantly to meet the most demanding workloads.

Implement Automatic Dynamic Storage Tiering

With intelligent and automated storage tiering in place, administrators can place business-critical and frequently used data in the highest performing tier, which supports the fastest retrieval. Less important or infrequently used data can be stored in lower-cost, lower-performance tiers.

Use Automated Provisioning to Move More Quickly

Dynamic or thin-provisioning solutions help balance user demands, providing apps and processes instant access to the required amount of storage in any given moment. Thin provisioning ensures that compute and storage resources expand and contract as needed, meaning an app or process always has what it needs, and you optimize the use of shared resources across the business.

Discover Hitachi solutions for increasing Oracle database performance:

Hitachi Unified Compute Platform 6000 for Oracle RAC

Hitachi Virtual Storage Platform (VSP) solutions:

VSP G series, including VSP G600, VSP G800 and VSP G1000

VSP F series (all flash), including VSP F600 and VSP F800

3

Maximize Availability in an Always-On World

Increasing connectivity and always-available information is changing our expectations about how we live and work. Your customers, employees and partners expect instant access to information, and they expect to carry out tasks from any device, anywhere, at any time. If your business is going to meet expectations, it needs a foundation of a high-performing and resilient IT infrastructure.

What's the challenge?

Delivering in an always-on environment involves two distinct challenges: You need speed, which is sometimes the most competitive advantage, but you also need availability, which cannot be sacrificed.

Your business must be able to reliably serve up data on demand, but it must also be able to quickly recover from any service interruption. Failure of either is simply not acceptable.

Improve Resilience By Transitioning to the Cloud

Oracle database platforms work in public, private and hybrid cloud environments. The first step in your cloud review process is to assess the level of customization and flexibility that you expect to need and match it to the solutions and expertise vendors offer. This decision will vary depending upon your particular data and business needs, as well as the sensitivity of the data.

Public Hybrid Private

Ask if the vendor has an extensive Oracle partnership ecosystem for implementing and operating custom variations of public, hybrid and private clouds. Regardless of the cloud structure you ultimately choose, a wide range of tools and functionality is available to help maintain high availability for your mission-critical apps.

Fortunately, there are solutions that are cloud-ready, optimized for the Oracle database and pre-integrated to reduce deployment time.

Use virtualized storage. Virtualized storage is the heart of the cloud, ensuring there's always enough space for rapid backup of your Oracle databases, and no single point of failure. Storing data across multiple, geographically dispersed systems improves day-to-day performance and can significantly speed up recovery times.

Automate data protection. A single platform with the power to offer data protection, retention and recovery capabilities for your whole Oracle environment makes it easier for IT teams to manage for high availability. The single platform provides database protection and retention options that cut delays for users by eliminating backup windows and accelerating recovery.

Deploy active-active technology to simplify always-on availability. Active-active solutions create mirrored storage between matched systems that are continuously updated. If a failure occurs at one site, the other automatically takes over so you always have consistent, up-to-date data and uninterrupted database productivity. Active-active solutions also retrieve replicated data via the shortest path to allow your business to recover even more quickly.

Investigate Hitachi Data Systems solutions that help you migrate to the cloud. Discover the cloud model that matches your budget, addresses your security concerns and enables your business goals:

Hitachi Private Cloud

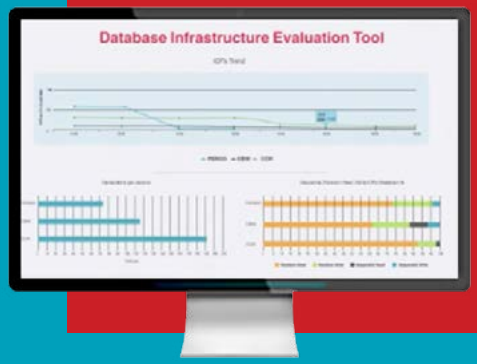
Hitachi Data Protection, Retention and Recovery Solutions

Hitachi Data Systems

HITACHI
Inspire the Next

Take the Next Step

If your business runs on Oracle databases, you're committed to getting the performance, resilience and best TCO you can, while still meeting your business goals. The first step to getting more from your Oracle infrastructure is to understand its current state. Is it built to deliver the performance, resilience and efficiency your business needs? If it's not, what's causing the shortfall?



Oracle Optimization: Try Our Free Tool

Hitachi Database Infrastructure Evaluation Tool, also called DIET, provides a comprehensive report on your Oracle database I/O profile and bottlenecks. This free tool offers tailored recommendations that will help you get the most from your investment.

Try a light version of the tool for free.

Are you ready to boost your Oracle performance?

As an Oracle Diamond partner with more than 20 years working with demanding and dynamic Oracle environments, Hitachi can help you develop a baseline, diagnose issues and build a plan to address them. We can assist you whether you use our suite of converged, storage and compute solutions or those of other providers. Contact us today to get started.

Hitachi Data Systems

Corporate Headquarters
2845 Lafayette Street
Santa Clara, CA 96050-2639 USA
www.HDS.com | community.HDS.com

Regional Contact Information
Americas: +1 866 374 5822 or info@hds.com
Europe, Middle East and Africa: +44 (0) 1753 618000 or info.emea@hds.com
Asia Pacific: +852 31897900 or hds.marketing.apac@hds.com

CM-001-A TC January 2016

ORACLE Diamond Partner