



RED HAT ENTERPRISE LINUX: THE IDEAL PLATFORM FOR RUNNING YOUR ORACLE DATABASE

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INTRODUCTION

Your mission-critical CRM, ERP, ETL, or DSS deployments rely heavily on an Oracle database that needs to be reliable, available, and scalable. Historically, database customers sought out the UNIX/RISC platforms to best enable those features. But today, x86 servers have dramatically increased in performance and availability, making them a more cost-effective platform than ever for running Oracle databases. Of course, to fully maximize the performance and availability features of today's x86 hardware, you will need an enterprise operating system like Red Hat® Enterprise Linux®.

This paper highlights the benefits of using Red Hat Enterprise Linux as the server platform for your Oracle database implementation. It introduces you to information, customer success stories, and reference architectures that display our scalability, availability, reliability, and manageability.

SCALABILITY

Scalability and availability are two aspects of the same performance/growth curve. By definition you will have succeeded in scaling your platform if you can increase or maintain your availability to perform new transactions as peak load increases. Scalability is key as you manage increasing demands, and unlike UNIX, which can be prohibitively expensive, Linux provides cost-effective and efficient scalability.

Central Queensland University, a large distance-learning institution with 20,000 students and 1,200 staff, provides a case in point. Constrained by quickly decreasing capacity and motivated by cost considerations, CQUniversity migrated infrastructure from HP Tru64 UNIX to Red Hat Enterprise Linux on HP Blade Servers. The IT team was able to deploy more systems, with an immediate 20 to 30 percent gain in performance and at an overall cost savings of \$100,000.

With Red Hat Enterprise Linux as the Oracle database server platform, your IT managers can be as conservative or innovative as they choose in balancing the different activities in your environments (R&D, QA, staging, production). Red Hat Enterprise Linux effectively hosts Oracle databases on any size platform, so you have the flexibility to choose your deployment based on your strategy and technical requirements. When you grow, you can keep the same operating system and the same database, whether it's a small-scale pilot deployment or an enterprise-wide production environment.

For more information on scaling Oracle running Red Hat Enterprise Linux, see the following reference architecture documents:

[Vertical Scaling of Oracle 10g Performance on Xeon Servers running Red Hat Enterprise Linux 5](#)

[Scaling Oracle 10g in a Red Hat Enterprise Virtualization Environment](#)



AVAILABILITY

In order to increase availability of a service, the ultimate goal is to eliminate single points of failure within that service. This means taking the time and effort (and yes, cost) to make various components redundant. For an enterprise system with many concurrent users, the common practice is to make the web tier in the production datacenter highly redundant—a high-availability database cluster is typically over-provisioned so that it can handle peak traffic.

In such situations it is vital that both the servers and the databases are available, so the OS must maintain awareness of the applications. Because Red Hat Enterprise Linux enables and supports Oracle's cluster components in addition to our own, it maintains that awareness and enables you to create an integrated and highly available database cluster in your environment.

Customers who have migrated from older UNIX server platforms to Red Hat Enterprise Linux testify to unexpected gains in availability through the greater efficiency of a well-tuned Oracle database and Linux kernel. For example, Western Power, a government-owned Australian electricity company, migrating from HP-UX to Red Hat Enterprise Linux enabled them to observe both a CPU usage drop and an overall performance gain of 500% while processing the normal Oracle database workload. In this case, high availability manifested as performance benefits. Through migration to Red Hat Enterprise Linux, Western Power's system became five times more available for database transaction processing work. As you can see, you don't have to sacrifice availability when you run on Linux. Like UNIX systems, you can build highly available clusters on Red Hat Enterprise Linux.

And so Western Power's success in migrating from UNIX to Red Hat Enterprise Linux is more properly understood as a simultaneous increase in scalability as well as availability. Their migrated system, with its gain in CPU and overall system throughput, immediately became capable of supporting five times the size of its current business expressed in terms of real-time system workload.

In addition to Western Power, large international financial enterprises such as Citibank and trading floors such as NYSE-Euronext and the Tokyo Stock Exchange rely on Red Hat Enterprise Linux to ensure that their systems remain at their highest availability.

Whitepapers

[Deploying a Highly Available Web Server Using RHEL 5 Cluster Suite - Volume 1: NFS Web Content](#)

[Deploying a Highly Available Web Server Using RHEL 5 Cluster Suite - Volume 2: GFS & Shared Storage](#)

Customer success stories

[Western Power](#)

[Citigroup](#)



RELIABILITY

Ever since the release of version 4 in 2005, Red Hat Enterprise Linux has been recognized as an enterprise platform capable of hosting Oracle workloads.

Most of the major enterprise ISVs, including Oracle, support and certify their software running on Red Hat Enterprise Linux, and major hardware vendors support their hardware when it runs Red Hat Enterprise Linux. So all innovations included in Red Hat Enterprise Linux are already proven to work with the applications and hardware that you likely use in your company.

You can evolve your platform with the security of knowing that Red Hat, with its technical and business relationships in the enterprise market, is innovating with the full cooperation of an entire platform supply chain.

For these reasons, businesses with enterprise systems running Linux choose Red Hat Enterprise Linux for its proven reliability in facilitating the Oracle database in processing the most demanding workloads.

In order to get the most out of both environments and deploy most effectively, we recommend that you read the following reference architecture documents:

[Deploying Oracle 10g on Red Hat Enterprise Linux](#)

[Tuning Red Hat Enterprise Linux for Oracle 9i/10g](#)

Customer success story

[Verizon Communications](#)

MANAGEABILITY

A customer rarely has only one instance of Oracle running in their company, as there are different types of data that you have to manage. If you run Oracle on several machines, how do you manage all of those systems? On site, within the datacenter, Red Hat Network Satellite provides a powerful integrated view of the entire lifecycle of a system, from research and development stages, through staging and smoke testing, migration, retirement, and redeployment (if needed).

Red Hat Enterprise Linux is fast, reliable, and gives you the manageability that you require. In addition, we are as easy to manage (if not more so) as UNIX or Windows. Central Queensland University found that when using Red Hat Network Satellite server, the team was less encumbered with servicing existing systems at the university's existing 11 sites and could more efficiently design and roll out new high-value roles.

With a single interface, through server roles (groups of servers all performing the same function within the system architecture), and layered software groups called channels (all of the software installed and configured to support a given server role), Red Hat Network Satellite facilitates adding capacity to any role, upgrading any software channel with as much confidence as you would have after certifying the system readiness of one physical computer.

Realistically, if you have a successfully functioning Oracle production deployment—implying a tuned platform stack—you do not want to make any but the most carefully verified surgical interventions in the form of patches or upgrades. Red Hat Network Satellite offers the enterprise Linux management framework that can certify that whatever changes you are making today to the production platform in the current maintenance have passed through a rigorously controlled and auditable workflow.



Keeping track of dependencies is fundamental to Red Hat Network Satellite and its concept of software channels. And Red Hat's package management (RPM) technology—well proven in the large install base of satisfied Red Hat Enterprise Linux subscribers—is the means by which Red Hat Network Satellite conveys all software channel changes into datacenter environments. Should you need or decide to change your Oracle database software, Red Hat Satellite Server would deploy relevant packages on all servers that support roles in the application stack that are somehow impacted by the change.

RED HAT SUBSCRIPTIONS

Your IT application infrastructure is the foundation of your business. It must be scalable, available, and fully secure. You need more than a support contract. You need a collaborative relationship with your technology vendor—a key component in your successful strategy to deploy and maintain an enterprise platform that must continually evolve.

Traditional software business models are based on licenses, support, and maintenance agreements. You can call only when something goes wrong. Your Red Hat subscription, however, delivers high-quality software and maintenance along with information and support services that span your entire application infrastructure lifecycle. It is a truly collaborative relationship. When you engage Red Hat support, you often work with people who write and test the software and oversee the open source development process of the underlying technologies. And you can contact Red Hat any time to leverage our expertise during all phases of planning, testing, deploying, and upgrading your infrastructure.

In addition to tested and certified enterprise software solutions and our world-class expertise, as well as the scalability, availability, reliability, and manageability noted above, your Red Hat Enterprise Linux subscription includes access to:

- Robust security processes
- Award-winning technical support, up to 24 hours a day, seven days a week
- Open source legal assurance, to protect you from legal harm while using Red Hat software
- A stable environment, as each major release of Red Hat software is supported for up to 10 years and maintained without compromising the stability of ABI and API
- Cost savings, as Red Hat does not charge license or upgrade fees, additional maintenance fees, per-incident support fees, or user access fees
- Flexibility, as Red Hat subscriptions are transferable to any of your servers and are not version-specific, so you can upgrade or downgrade at your convenience for no additional cost
- Open application programming interfaces (APIs), so you not only have access to the source code for your operating system, but also access to supported open interfaces

Your database deployment isn't something to take chances on. So why settle for doing business with software vendors that only want to engage with you when something goes wrong? With a Red Hat subscription, you not only get a robust, scalable, and flexible IT application platform that meets your performance, security, and budgetary goals. In addition, you get access to Red Hat's world-class expertise and culture of innovation and collaboration that will support you throughout your entire infrastructure lifecycle. Red Hat's dedication to deliver value through the Red Hat subscription means you will get the technology, expertise, and value you need to succeed today and in the future.



CONCLUSION

It is clear that when you make the decision to move your Oracle workloads from your legacy RISC/UNIX to an x86 environment, you do not want to sacrifice the scalability, availability, reliability, and manageability that you have enjoyed. Red Hat Enterprise Linux is the logical choice because you maintain those capabilities; the UNIX skills that you already have in-house are applicable to Linux (so you won't lose the investment in your personnel); you will experience better performance with Linux than with Windows; and you may enjoy cost savings as well.

It is worth noting that because you are running Oracle, it might seem logical to migrate to Oracle Enterprise Linux (OEL), but consider that Red Hat Enterprise Linux is the No. 1 commercial Linux distribution in the world. OEL is a derivative of Red Hat Enterprise Linux and does not enjoy the same level of support or acceptance in the industry—unlike Red Hat Enterprise Linux, OEL is not an industry standard. In addition, most enterprises have Red Hat Enterprise Linux already in their environments, and so most IT managers have a pool of certified Red Hat Enterprise Linux professionals to choose from as they build out their businesses. Adding another Linux distribution to the mix is not efficient and doesn't make sense when logic dictates streamlining your environment.

Red Hat Enterprise Linux is quite simply the best choice to host your Oracle deployments.

For further information, the following whitepapers are available:

[Virtualized Oracle 10g Servers on Red Hat Enterprise Linux](#)

[Comparing Oracle OLTP Performance on Red Hat Enterprise Linux 5.4 to Windows Server 2008 R2 Enterprise](#)

[Red Hat Enterprise Linux 5.4 versus Windows Server 2008 for Oracle OLTP](#)

Relevant customer success stories are also available:

customers.redhat.com/category/partner/oracle/

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