HOW AN ENGINEERED SYSTEM OPTIMIZES BUSINESS RESULTS

IF YOU'RE ALREADY RUNNING ORACLE DATABASE, YOU SHOULD CONSIDER RUNNING ON ORACLE DATABASE APPLIANCE TO OBTAIN THE FULL SCOPE OF IT AND BUSINESS BENEFITS.

Databases tend to hold an organization's most important information and power the most crucial applications. It only makes sense, then, to run them on a system that's engineered specifically to optimize database infrastructure.

Yet some companies continue to run their databases on do-it-yourself (DIY) infrastructure, using separate server, software, network, and storage systems. It's a setup that increases risk, cost, complexity, and time spent deploying and managing the systems, given that it typically involves at least three different IT groups.

That's why IT organizations are increasingly turning to converged systems. They are faster to deploy and easier to support and manage over the long term, because they are far less complex. What's more, they deliver superior performance and a lower total cost of ownership (TCO) than DIY systems.

GROWTH OF CONVERGED SYSTEMS

The idea of combining server, software, storage, and networking onto an integrated platform has caught on. Such converged systems are sold with additional pre-integrated, packaged software and customized system engineering optimized to enable functions such as application development software, databases, testing, and integration tools.

According to IDC, Oracle is the top-ranked supplier of integrated platforms and has a 45% market share in this category.

ORACLE DATABASE APPLIANCE

Oracle Database Appliance takes convergence to the next level, adding in database and applications, in a format that's cloud-ready. It's a complete engineered system that integrates software, server, storage, and network resources. Oracle Database Appliance supports database services for a range of custom and packaged online transaction processing (OLTP), in-memory database, and data warehousing applications. All the hardware and software

components are engineered together and supported by Oracle, providing a reliable and secure system with built-in automation and best practices that decrease the time to value of deploying database solutions.

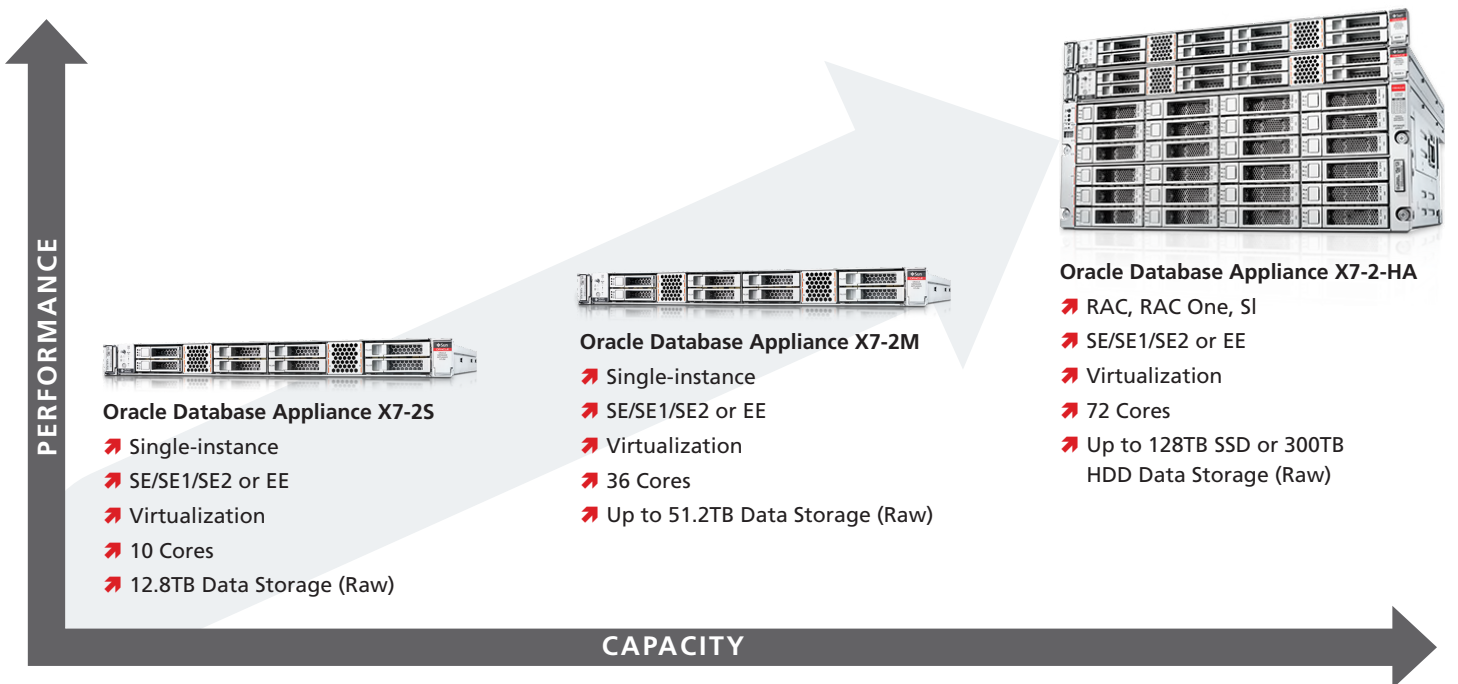There are multiple Oracle Database Appliance model options (see Figure 1).

Oracle Database Appliance is engineered and optimized specifically to run Oracle Database, both Standard and Enterprise Editions, so it delivers better performance than a DIY environment built for generic workloads.

ORACLE DATABASE APPLIANCE MAKES GOOD BUSINESS SENSE

Oracle Database Appliance offers the following benefits:

Shorter time to value. Because Oracle Database Appliance is an engineered system, setup and management are fast and easy. The DIY approach takes multiple administrators to complete a deployment: one each for the server, storage, and network systems, plus a database administrator. Oracle Database Appliance requires only one database administrator to do the deployment, using a wizard-based tool—simply unpack the appliance, plug in the power cords and networking cables, and run Oracle Appliance Manager. It's a highly automated experience, a database administrator can complete the job single-handedly in less than an hour.

FIGURE 1: **Oracle Database Appliance X7-2 Model Family**

Oracle Database Appliance X7-2-HA
↗ RAC, RAC One, Sl
↗ SE/SE1/SE2 or EE
↗ Virtualization
↗ 72 Cores
↗ Up to 128TB SSD or 300TB HDD Data Storage (Raw)

Oracle Database Appliance X7-2M
↗ Single-instance
↗ SE/SE1/SE2 or EE
↗ Virtualization
↗ 36 Cores
↗ Up to 51.2TB Data Storage (Raw)

Oracle Database Appliance X7-2S
↗ Single-instance
↗ SE/SE1/SE2 or EE
↗ Virtualization
↗ 10 Cores
↗ 12.8TB Data Storage (Raw)

PERFORMANCE

CAPACITY

That simplicity extends to ongoing management. Where the DIY setup includes multivendor components and updates, Oracle Database Appliance is an integrated system that requires less staff time and expense.

Increased reliability, reduced risk of downtime. With Oracle Database Appliance, a single periodic patch bundle covers all integrated elements: firmware, OS, storage, and database. That dramatically decreases the possibility of human error in applying patches and means far less planned downtime. It all adds up to increased reliability.

For those with even greater availability requirements, the Oracle Database Appliance high-availability (HA) model offers two servers in the base configuration, each with two 18-core Intel Xeon Gold 6140 processors, providing as many as 72 processor cores. These features help companies avoid downtime, which can be quite costly. Although the exact number varies by industry, Gartner puts the average cost of downtime at US$5,600 per minute, which comes out to US$336,000 per hour.

Engineered for Oracle Database. Oracle Database Appliance is engineered specifically to run Oracle Database, which brings another set of benefits. For example, features such as Hybrid Columnar Compression improve database performance and reduce storage requirements, and built-in flash storage and flash cache improve performance.

Oracle Database Appliance also has built-in hardware fault detection with a "phone home" feature that automatically files service requests when necessary. An integrated remote console enables remote management, and the appliance uses the same management interface as other Oracle products, so it will be readily familiar.

Security is built in to Oracle Database Appliance, not bolted on, and designed 100% by Oracle. Its operating system defaults to the highest level of security, FIPS 140-2, ensuring that Oracle Database Appliance is secure straight out of the box. It performs periodic scans to check for vulnerabilities, and the single quarterly patch also includes security updates. Encryption is offloaded to a specialized Intel chipset, so it doesn't interfere with database operations.

CASE STUDY: A TCO ANALYSIS

A large US-based manufacturer wanted to see how its DIY approach, including commodity hardware, would compare to the Oracle Database Appliance HA model.

The manufacturer's server infrastructure had 72 cores, which meant spending US$1.48 million up front for licenses. With Oracle Database Appliance, the customer could buy only the software it needed up front, with additional licenses added over time as necessary, spreading the costs over five years.

Setup and management could be simplified with Oracle Database Appliance. The manufacturer's DIY approach required multiple administrators with server, software, storage, and networking expertise, plus installation and optimization skills. Given its complexity, the company had to hire a consultant. By comparison, with Oracle Database Appliance, one person could do the job, saving the manufacturer US$38,000 over five years.

Altogether, the Oracle Database Appliance promised a savings of US$478,000 versus the DIY approach (see Figure 2).

FIGURE 2:

DIY vs. Oracle Database Appliance: Five-Year TCO Analysis*

	Customer's DIY System	Oracle Database Appliance HA
Year 1 Hardware & Software	US $1.48M	US $385,000
Year 2 Hardware & Software	US $268,000	US $383,000
Year 3 Hardware & Software	US $268,000	US $441,000
Year 4 Hardware & Software	US $271,000	US $498,000
Year 5 Hardware & Software	US $272,000	US $412,000
TOTAL:	US $2,559,000	US $2,119,000
Total Hardware & Software savings		US **$440,000**
Additional savings: no consultant needed for Oracle Database Appliance setup (US$27,000) + one Oracle Database Appliance admin vs. three admins to manage DIY setup (US$11,000)		US $38,000
Total Five-Year TCO Savings		US **$478,000**

*The ODA model starts with 16 cores enabled for Oracle Database (using Capacity on Demand Pay-as-you-Grow licensing model), and then adds 16 cores in each year until, in Year 5, an additional 8 cores are enabled. In the DIY model, all 72 cores must be licensed in Year 1 for Oracle Database. TCO resulting from ODA includes: hardware and maintenance, software licenses and maintenance and facilities.

ORACLE®

Simple path to the cloud. Oracle Database Appliance is inherently cloud-ready and offers a hybrid approach that supports both on-premises systems and the public cloud. Equivalents to Oracle Database Appliance exist in Oracle Public Cloud, making it simple to transfer workloads and applications to the cloud anytime a company chooses. Oracle Database Appliance also supports seamless backup to the cloud, providing benefits including

- Easy recovery of database backups
- Archived backups to meet compliance requirements
- A hybrid backup architecture
- Simplified database clones

Increased savings. Oracle Database Appliance also enables companies to save on software licensing. With the DIY model, companies must pay for licenses for each core incorporated into the database server setup. Given that most companies build systems that leave room for future growth, that means paying for licenses you may not use for years to come. Oracle Database Appliance, by contrast, enables a capacity on-demand model; you pay only for the database licenses you actually need at any given time.

Additionally, Oracle Database Appliance eliminates the need to spend money for additional software, including storage management, operating systems, virtualization, and test/dev lifecycle management.

ORACLE DATABASE APPLIANCE MEANS NO MORE DIY

The DIY model of IT no longer makes sense, not when you can get a purpose-built, engineered system that can run your Oracle Database more efficiently and cost-effectively.

Oracle Database Appliance also supports a "Solution-in-a-Box" environment; it's built to run Oracle Database and applications on the same system. For example, Oracle Database Appliance enables you to quickly deploy a database and application on the same system. IT can then standardize on a single-vendor platform to reduce deployment and maintenance risks and lower operating costs by having the same application across the network.

Another benefit: Oracle Database Appliance can decrease operational expenses by consolidating databases and applications with maximum utilization and reduce capital expenses by using current staff to manage the platform locally and remotely.

DIY vs. Oracle Database Appliance

Business value by the numbers

COMPONENTS

5 VS. **1**

DIY: server, storage, networking, database, consultants

ORACLE DATABASE APPLIANCE:
1 appliance

STAFF/SKILLS

7 VS. **1**

DIY: database admin, network admin, storage admin, system admin, installer, HA expert, optimization skills

ORACLE DATABASE APPLIANCE:
database admin

PATCHES/YEAR

DIY: 16+

ORACLE DATABASE APPLIANCE: 4

STAFF HOURS: MAINTENANCE + SUPPORT FOR THREE YEARS

DIY: 863

ORACLE DATABASE APPLIANCE: 36

Oracle Database Appliance helps businesses realize

- Shorter time to value
- Rapid ROI
- Improved IT productivity
- Lower software licensing costs, both up front and over time
- Less planned downtime and increased reliability

Databases are too important to run in a DIY environment intended for general-purpose workloads. Oracle Database Appliance provides a platform that gives your Oracle Database instances and applications the security and performance they need—all at a lower TCO.

Learn more about the value Oracle Database Appliance can deliver to your business.
Visit: **www.oracle.com/oda**