

# Dell EMC™ PowerEdge™ Servers Let You Run Oracle® Database Workloads at a Lower TCO

## Reduce Your Hardware, Software, and Licensing Costs

Oracle® Database has become an industry mainstay for relational database workloads in the enterprise.<sup>1</sup> But choosing the right platform for your Oracle database can make a big difference to your bottom line.

IBM® Power® Systems are a popular option for running Oracle Database workloads, but these servers come with significant overhead from upfront hardware costs and longer-term software, licensing, support, and management expenses.

Detailed analysis by Prowess Consulting demonstrates that two- and four-socket Dell EMC™ PowerEdge™ servers can provide significantly lower hardware costs than two- and four-socket IBM Power System servers with similar specs. Our research determined that operating expenses (OpEx) for Dell EMC PowerEdge servers are also lower due to more favorable support and software licensing costs. Oracle software licensing fees, in particular, were significantly lower for the Dell Technologies™ servers, which benefit from a lower per-core pricing formula used for x86-processor-based servers.

### Dell EMC™ PowerEdge™ servers provide:<sup>2</sup>



Two-socket server CapEx:

**82%**  
savings



Four-socket server CapEx:

**90%**  
savings



Two-socket server TCO:

**31%**  
savings



Four-socket server TCO:

**36%**  
savings

## Fast, Scalable Storage for Oracle® Databases

Prowess found the Dell EMC™ PowerStore appliance to be a compelling option for providing highly performant, scalable storage infrastructure for Oracle Database workloads running on Dell EMC™ PowerEdge™ servers. In addition, our testing showed that PowerStore snapshot technology had minimal impact on system performance.

PowerStore supports NVM Express® (NVMe®) solid-state drives (SSDs), NVMe NVRAM for system cache, storage-class memory (SCM), and up to 32 gigabit (Gb) Fibre Channel (FC) and 25 Gb Ethernet (GbE). The appliance also offers intelligent scale-up and scale-out capabilities, automated management of resources, and simplified administration.

PowerStore also supports thin provisioning, and it provides always-on data compression and deduplication to help lower costs and improve efficiency without compromising performance. PowerStore uses patented technology built from the ground up, called Dynamic Resiliency Engine (DRE), to help protect data and improve the reliability of the appliance. Because of this, Oracle® Automatic Storage Management (ASM) mirroring is not needed, which reduces storage usage and increases overall performance.

# Software Licensing and Support Costs

Our research determined that operating system (OS) software, system support, and application licensing costs were higher for the IBM® systems than for the Dell EMC PowerEdge systems. For example, the IBM® AIX® OS costs significantly more than the Red Hat® Enterprise Linux® (RHEL) OS used with the PowerEdge systems. In addition, Oracle Database licensing costs are higher for the IBM systems because they are subject to an Oracle core factor of 1.0, compared to a factor of 0.5 for the Dell Technologies systems. Although actual customer pricing for Oracle would be determined through negotiations with Oracle, our analysis assumes that a customer would receive similar discount percentages from Oracle for platforms on either IBM or Dell Technologies servers.

Total licensing and support costs were **26 percent lower** for both the two- and four-socket Dell EMC PowerEdge servers that we evaluated than the comparable two- and four-socket IBM Power System servers, as shown in Table 1.

**Table 1.** Three-year support and licensing costs for the two- and four-socket systems

Support and Software	Three-Year Costs: 2-Socket Systems		Three-Year Costs: 4-Socket Systems	
	Dell EMC™ PowerEdge™ R740xd (36 cores)	IBM® Power® System S924 (24 cores)	Dell EMC PowerEdge R940 (72 cores)	IBM Power System E950 (48 cores)
Support	\$2,338	\$12,528	\$3,865	\$26,676
Red Hat® Enterprise Linux® (RHEL)	\$6,144	N/A	\$6,144	N/A
IBM® AIX® 7.2 Enterprise Edition	Not applicable (N/A)	\$29,952	N/A	\$59,904
Oracle® Database licensing	\$1,269,000	\$1,692,000	\$2,538,000	\$3,384,000
<b>Total</b>	<b>\$1,277,482</b>	<b>\$1,734,480</b>	<b>\$2,548,009</b>	<b>\$3,470,580</b>

The analysis in this document was done by Prowess Consulting and commissioned by Dell Technologies.

Results have been simulated and are provided for informational purposes only. Any difference in system hardware or software design or configuration may affect actual performance.

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# Dell Technologies Management, Automation, and Services

Dell Technologies offers several software tools and services that simplify management and support. For example, the Dell EMC™ OpenManage™ Enterprise console provides a comprehensive view of Dell Technologies servers, chassis, storage, and network switches on the enterprise network. It also supports plugins to automate installation of firmware and drivers for streamlined updates, includes hands-free infrastructure deployment and discovery, and generates customized reports.

Organizations that standardize on Dell Technologies hardware, software, and services can benefit from increased utilization and simplified management and support, which, in turn, can lower total cost of ownership (TCO) over a three-year period and beyond.

## Learn More

Get the full story by reading our paper, [“Lower Your TCO by Selecting the Right Platform for Your Oracle® Workloads.”](#)

<sup>1</sup> DB-Engines. “DB-Engines Ranking.” December 2020. <https://db-engines.com/en/ranking>.

<sup>2</sup> Based on head-to-head comparisons of Dell EMC™ PowerEdge™ R740xd vs. IBM® Power® System S924 and Dell EMC PowerEdge R940 vs. IBM Power System E950.