



IBM Power Systems with AIX for Oracle's JD Edwards EnterpriseOne Applications

Powerful, dynamic systems with POWER8 processors keep you ahead of the latest technology trends

Designed and built for your business-critical JD Edwards EnterpriseOne deployments

Data-centric design and optimization brings faster insight to the point of impact

Improved IT economics efficiently deliver business services with a scalable, open computing platform

Joint IBM and Oracle testing, planning, and support deliver a robust enterprise-class computing platform for JD Edwards EnterpriseOne

Built with innovation that puts data to work

It's no secret that dynamic technology changes are rapidly remaking how organizations do business. The growing torrent of data from both within and outside your organization, from mobile employees and from customers and prospects, presents an unprecedented opportunity to gain valuable insights and apply these insights at the best point of impact to improve your business results.

Making the transition to advanced capabilities requires an integrated infrastructure that supports your key IT initiatives, and business critical JD Edwards EnterpriseOne deployments. Our investments to bring optimized solutions in the areas of big data, analytics, cloud, and mobile access are designed to simplify and accelerate your journey to address today's market opportunities.

The newest generation of IBM® Power Systems™, with POWER8™ technology, is the first family of systems built with innovations that transform the power of big data and analytics, mobile, and cloud into competitive advantages in ways never before possible.



Optimized for the rigorous demands of enterprise computing

IBM understands that applications and business processes have differing demands and that one size does not fit all. To ensure that technology aligns to business rather than the other way around, IBM offers a full range of Power® Systems servers each of which delivers leadership data capabilities, security, performance and scalability in its class. A totally integrated approach to the design, development, and testing of each and every Power server ensures the resiliency required for today's JD Edwards EnterpriseOne deployments.

All Power Systems server models include innovative reliability, availability and serviceability features that help avoid unplanned downtime—plus a wide range of open technologies that give you added flexibility to match business needs. And, with PowerHA®, Capacity on Demand, and Live Partition Mobility—Power Systems enterprise servers ensure businesses can keep their systems available, even as they add capacity to handle new and growing business demands.

Built on POWER, designed for data

POWER® processor technology is a reduced instruction-set computing (RISC) architecture that spans applications from consumer electronics to supercomputers. POWER processors are at the forefront of both commercial and technical or high performance computing. So, in addition to excelling at commercial workloads like JD Edwards EnterpriseOne, POWER is also behind many of today's top supercomputers. And POWER8 is the first processor designed from the ground up to handle big data.

POWER processors provide the foundation for designing systems for both traditional workloads like JD Edwards EnterpriseOne and compute and data-intensive workloads like Web, analytics, mobile, and social applications. To achieve maximum performance, POWER processor-based systems are designed with optimization technologies that enable the system to tune automatically to specific workloads. Our latest generation of systems built with POWER8 technology offers balanced data-centric design to support the most challenging and complex data-hungry applications 2x faster than the prior generation:

- Gain faster insights with the POWER8 processor and smart acceleration enabled by CAPI (Coherent Accelerator Processor Interface) technologies such as FPGA accelerators for key workloads
- Achieve lower latency and smaller footprint with CAPI Flash
- Move data in and out of systems more quickly with twice the memory and I/O expansion
- Achieve greater speed and efficiency for database, transactional and other highly multi-threaded applications with transactional memory supported by 50 percent more cores and 2x the number of simultaneous threads per core

Integrated and easy-to-deploy

A totally integrated approach to the design, development, and testing of each and every IBM Power Systems server ensures that they are simple to deploy and highly reliable as a foundation for JD Edwards EnterpriseOne. IBM Power Systems offers thousands of popular industry applications from ISVs running on a choice of Linux®, AIX®, and IBM i operating systems. IBM has a full range of affordable Power Systems servers, each of which delivers leadership performance and scalability in its class.

The IBM and Oracle alliance

Since 1986, Oracle and IBM have been providing customers with compelling joint solutions, combining Oracle's technology and application software with IBM's complementary hardware, software and services solutions. More than 100,000 joint clients benefit from the strength and stability of the Oracle and IBM alliance, which offers technology, applications, services, and hardware solutions that mitigate risk, boost efficiency, and lower total cost of ownership.

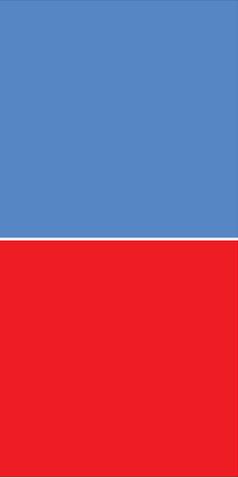
IBM is a Diamond level Partner and has also earned Cloud Elite status in the Oracle Partner Network, delivering the proven combination of industry insight, extensive real-world Oracle applications experience, deep technical skills and high performance servers and storage to create a complete business solution with a defined return on investment. From application selection, purchase and implementation to upgrade and maintenance, we help organizations reduce the total cost of ownership and the complexity of managing their current and future applications environment while building a solid base for business growth.

AIX – The future of UNIX

According to IDC, the IBM Power Systems platform with AIX technology is the leader in worldwide UNIX® server revenue share.¹ An open standards-based UNIX operating system, IBM AIX software exploits decades of IBM technology innovation. According to ITIC's 2013 survey, the IBM AIX operating system delivered the highest reliability scores among different server operating systems, including Linux and other UNIX operating systems.²

AIX technology offers deep integration and optimization with PowerVM™ virtualization, PowerVC™ advanced virtualization management, and PowerHA® high availability software. The latest AIX 7.2 release features new cluster-aware integration with PowerHA, as well as the ability to run AIX 5.3 Workload Partitions to facilitate application migration and reuse. The AIX operating system is available in three editions for a range of capability and flexibility for both mid-sized and large enterprises.

AIX 7 and the previous release, AIX 6, are binary compatible with previous versions of AIX including AIX 5L™. This means that applications that ran on earlier versions will continue to run on AIX 7 or 6—guaranteed.³



JD Edwards EnterpriseOne applications

Oracle's JD Edwards EnterpriseOne is an integrated applications suite of comprehensive enterprise resource planning software that combines business value, standards-based technology that is flexible and configurable, and deep industry experience in a business solution with a low total cost of ownership. The JD Edwards EnterpriseOne software suite offers a choice of databases and deployment options, including on-premises, private cloud, public cloud or hybrid cloud for customer choice and control. With over 80 application modules, end-user reporting, an array of out-of-the-box mobile applications, and personalization capabilities, JD Edwards EnterpriseOne enables digital transformation for your connected, agile, and real-time business.

As part of Oracle's Applications Unlimited strategy, JD Edwards EnterpriseOne applications will continue to be enhanced, thus protecting and extending the value of your software investment.

Power Systems benchmark for JD Edwards EnterpriseOne

IBM has demonstrated outstanding performance and scalability using an IBM Power Systems server—built with POWER8 processors—running the JD Edwards EnterpriseOne Day-in-the-Life benchmark workload. The results of this benchmark demonstrate the remarkable per-core performance of IBM's latest version of the POWER processor.

The IBM systems used for the benchmark testing were an IBM Power System S824 server with a 4.2 GHz POWER8 six-core processor card and 256 GB of memory, and an IBM FlashSystem™ 840 flash storage array. The Power S824 server ran in a logical three-tier configuration with the database, web server and application server instances in an AIX® operating system LPAR with three cores active.

The interactive user tests demonstrated 2250 concurrently active users running a mixture of JD Edwards EnterpriseOne applications at 0.279 second average response time and 94% average system utilization. This works out to an impressive 750 active users per core.

In mixed batch and interactive user tests the Power S824 server ran 1000 concurrently active users and completed 60 UBE (Universal Batch Engine) jobs per minute while maintaining a 0.218 second average response time and 96% system utilization. This phase of the testing clearly demonstrated the POWER8 processor's strength at handling the demands of interactive and batch workloads simultaneously.⁴

Power Systems Software

IBM offers a full range of IBM Power Systems Software™ technologies that enable businesses using JD Edwards EnterpriseOne to fully exploit Power Systems servers. Designed and optimized specifically for Power Systems, IBM's offerings include IBM PowerVM virtualization software, IBM PowerHA software for high availability, PowerVP™ for performance monitoring, PowerVC for advanced virtualization management, and IBM Systems Director with IBM Active Energy Manager for platform and energy management. IBM's integrated approach to developing the systems and software together enables high system utilization, high resiliency and simplified management.

PowerVM virtualization

IBM PowerVM provides the industrial-strength virtualization solution for IBM Power Systems servers that run JD Edwards EnterpriseOne workloads. Based on more than a decade of evolution and innovation, PowerVM represents the state of the art in enterprise virtualization and is broadly deployed in production environments worldwide by most Power Systems owners.

The IBM Power Systems family of scale-out and enterprise (scale-up) servers includes proven workload consolidation platforms that help clients control costs while improving overall performance, availability and energy efficiency. With these servers and IBM PowerVM virtualization solutions, an organization can consolidate large numbers of applications and servers, fully virtualize its system resources, and provide a more flexible, dynamic IT infrastructure. In other words, IBM Power Systems with PowerVM deliver the benefits of virtualization without limits.

PowerVM also offers a secure and resilient virtualization environment, built on the advanced RAS (reliability, availability and serviceability) features, extreme scalability and leadership performance of the IBM Power Systems platform, based on the outstanding Power processors.

PowerHA – resiliency without downtime

Smarter computing by nature requires businesses to raise their services delivery levels, fueling 24x7 high availability demands for their applications and IT infrastructure. PowerHA SystemMirror for AIX and IBM i is a high availability clustering solution for both data center and multisite resiliency. PowerHA is designed to protect JD Edwards EnterpriseOne business applications from outages of virtually any kind, helping ensure round-the-clock business operations.

The best high availability and disaster recovery plans involve an integrated approach to resiliency spanning across applications, operating systems, servers and storage. That's why PowerHA software offers deep integration and optimization between PowerHA SystemMirror software and AIX and IBM i.

IBM PowerVC Virtualization Center

PowerVC is an advanced virtualization management offering, built on OpenStack, that provides simplified virtualization management for IBM AIX, IBM i and Linux virtual machines (VMs) running on IBM Power Systems. PowerVC is designed to improve administrator productivity and simplify the management of VMs and LPARs on Power Systems servers. PowerVC provides the foundation for Power Systems scalable cloud management, including integration to higher-level cloud managers based on OpenStack technology. PowerVC helps JD Edwards EnterpriseOne customers using Power Systems servers to lower their total cost of ownership with a simplified user experience that allows simple deployment and movement of workloads and policies to maximize resource utilization.



IBM System Storage

Disk and tape storage are critical elements of a JD Edwards EnterpriseOne environment. Designed with performance, growth, reliability, and availability in mind, IBM System Storage® products, such as the IBM DS8000®, IBM XIV® Storage System, and IBM Storwize® V7000 provide a continuum of storage solutions. IBM FlashSystem™ flash storage that can deliver significant performance improvements and the IBM SAN Volume Controller to enhance your storage infrastructure flexibility round out IBM's comprehensive storage product portfolio.

IBM also offers a compelling market-leading array of tape storage products to help protect JD Edwards EnterpriseOne data including deduplication virtual tape appliances, enterprise tape libraries, and tape drives. With IBM Spectrum Protect™ for Databases, these tape products are designed to provide low-cost, superior performance, high capacity and unattended backup from entry-level to enterprise server environments.

Sizing and capacity planning for JD Edwards EnterpriseOne on a Power System server

Working together, IBM and Oracle have developed a capacity-estimation capability to aid in designing an optimal configuration for each specific JD Edwards EnterpriseOne client environment. A detailed sizing estimate customized for your environment should be obtained from the IBM Digital Techline Center, accessible through your IBM or IBM Business Partner representative. You can download a questionnaire to start the sizing process from:

ibm.com/partnerworld/wps/servlet/ContentHandler/techline/FAQ00000750

For more information

To explore other Power Systems and Oracle solutions or to find out more about other joint solutions from IBM and Oracle, please contact an IBM sales representative at 1-866-426-9989, or visit us at:

ibm.com/oracle
ibmandoracle.com

For more information about IBM Power Systems and Oracle software product support, visit:

ibm.com/solutions/oracle/us/en/index/powersystems.html

For more information about the IBM Power Systems family, visit:

ibm.com/systems/power

For more information about the Storage Systems family, visit:

ibm.com/storage

For more information about JD Edwards EnterpriseOne, visit:

www.oracle.com/us/products/applications/jd-edwards-enterpriseone/overview/index.html

For more information about the IBM Power System S824 Day-In-the-Life Benchmark with JD Edwards EnterpriseOne Applications, visit:

ibm.com/support/techdocs/atmastr.nsf/WebIndex/FLASH10868



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¹ IDC Quarterly Server Tracker Q214 release, August 2014

² IBM's Power Systems recorded approximately 13 minutes per server / per year of unplanned downtime (99.997 percent uptime) according to the ITIC 2013 Global Server Hardware and Server OS Reliability Survey (itic-corp.com) with Oracle x86 servers recording the highest percentage of server outages among the 14 platforms surveyed

³ More information on the binary compatibility of AIX can be found at: ibm.com/systems/power/software/aix/compatibility/guarantee/index.html

⁴ The complete benchmark report is available at: www.oracle.com/us/solutions/benchmark/dilkit-jde-benchmark-ibm-results-3220743.pdf. This version of the JD Edwards EnterpriseOne "Day-in-the-Life" (DIL) benchmark kit is based on JD Edwards EnterpriseOne Applications 9.1 Update 2 and Tools release 9.1.4.4 and these results are not comparable with results for previous versions of JD Edwards EnterpriseOne, their respective Tools releases, or previous "Day-in-the-Life" benchmark kits.