IBM Systems for Oracle Fusion Middleware

IT infrastructure matters

Highly scalable, secure and resilient IBM zEnterprise and IBM Power Systems to protect and execute your most critical data and transaction loads

Expert integrated IBM PureFlex Systems to accelerate time to value and simplify management of hybrid workloads

IBM X-Architecture differentiates IBM System x from systems built from commodity components

IBM Smarter Storage to transform your data economics

IBM Systems

Your computing workloads are increasingly sophisticated and specialized. This diversity can increase complexity and can cost you money. Management costs account for up to 70 percent of typical IT budgets and 23 percent of IT projects go over budget. Today, you need systems that offer the performance you expect but also give you simplified management and efficiency so you can get the most out of your IT investment. With expert integrated systems; mainframes; x86 and POWER® processor-based servers; and disk, tape and network storage systems, IBM can offer the right combination of systems and expertise to help you tune your IT investment for the requirements of your business today—and into the future.
IBM PureFlex System
An IBM PureFlex™ System combines compute, storage, networking, virtualization and management into a single infrastructure system that is expert at sensing and anticipating resource needs to optimize your infrastructure. PureFlex System deployment expertise can accelerate your time to value up to 100 times versus traditional systems. Consolidation and management expertise from thousands of successful data center optimizations drives automation to significantly reduce manual processes that consume too many staff hours. Optimization expertise also allows your infrastructure to flex to address unexpected demands without requiring expensive surplus capacity.

Taking advantage of the full capabilities of POWER7®, POWER7+™, or Intel processors, the PureFlex System compute nodes are designed to offer the performance you need for your critical applications. With support for a range of hypervisors, operating systems and virtualization environments, the compute nodes provide an outstanding foundation for Oracle Fusion Middleware deployments.

IBM zEnterprise System
The IBM zEnterprise® System represents the latest System z technology and offers a proven hybrid computing design that can help you optimize Oracle workload deployments on best fit technologies and architectures providing for integration and management with the simplicity of a single system.

The zEnterprise System combines a central processing complex (CPC)—with the IBM zEnterprise BladeCenter Extension (zBX) where select IBM blade servers are hosted with built-in function to extend IBM's System z® governance and qualities of service to special purpose workload optimizers and general-purpose application serving resources. The IBM zEnterprise Unified Resource Manager enables end-to-end platform integration and resource optimization from a single point of control.

The zEnterprise EC12 (zEC12) is designed to deliver advanced performance, security, resiliency, availability and virtualization. Designed for larger enterprises, the zEC12 offers massive scalability for secure data serving, high-volume transaction processing and large-scale consolidation.

The zEnterprise BC12 (zBC12) is designed as an entry level enterprise server and onramp for any growing business looking to exploit System z technologies, qualities of service, flexibility and performance in a lower-cost package.

As environmental concerns raise the focus on energy consumption, both the zEC12 and zBC12 are designed to be extremely energy efficient, and can help dramatically reduce energy consumption and save floor space by consolidating workloads into a simpler more manageable and efficient environment.
IBM System x and BladeCenter
IBM System x® and BladeCenter® solutions are designed with proven IBM innovation around industry-standard components. Solutions that span feature-rich, scalable enterprise x86 servers, to rack-optimized servers designed for business productivity to entry-level tower servers. IBM differentiates itself in the crowded x86 marketplace by delivering high value offerings that are easy to deploy and manage while delivering leadership quality and service, and are based on leading technology.

System x and BladeCenter servers are built on IBM X-Architecture® for enterprise-class reliability. Servers based on the fifth generation of IBM X-Architecture (eX5) deliver innovation and offer extraordinary value and investment protection, are available in multiple form factors and include lower entry points for enterprise-level virtualization, database and transaction processing. The eX5 servers combined with MAX5 memory technology allow you to maximize memory, minimize cost and simplify deployment. The result is open, industry-standard servers optimized for today's demanding Oracle Fusion Middleware workloads.

IBM Power Systems
For over two decades, businesses have relied on Power Systems™ to deliver industry leading solutions to meet their compute intensive requirements. IBM extends its product innovation with Power Systems servers with POWER7+ processors for businesses of all sizes to help reduce costs, improve efficiency and drive faster insights. IBM has a full range of Power Systems servers, compute nodes and blades, each of which delivers leadership performance and scalability in its class. A totally integrated approach to the design, development, and testing of each and every Power server, blade or compute node ensures the resiliency required for today’s Oracle Fusion Middleware deployments.

Leadership POWER7+ performance
The POWER7+ processor serves up several new and unique innovations to continue the long history of leadership performance that now serves as the standard for the industry. New with POWER7+ are a larger L3 cache and two built-in accelerators for additional performance, the Active Memory™ Expansion hardware accelerator and the AIX® cryptographic accelerator. Increased clock speeds provide additional performance gains to make the POWER7+ processor a workhorse for business-critical workloads. This means that applications can run faster and be more responsive, which can result in competitive advantages and higher customer satisfaction. In addition, a single system can now run more applications using Oracle Fusion Middleware, which can drive utilization even higher and result in infrastructure cost savings.
IBM Smarter Storage

IBM Smarter Storage simplifies the adoption of cloud computing, making storage an enabler of cloud initiatives—rather than an obstacle. IBM Storage systems leverage cloud-agile capabilities that help increase information access and improve return on investment (ROI) while managing data with ease, efficiency and scalability. IBM storage offerings such as the versatile Storwize® family, DS8000® with advanced Easy Tier® optimization, XIV® Gen3 Storage System with Hyperscale Mobility, IBM FlashSystem™ flash storage for Oracle application acceleration, IBM System Storage® tape products, Tivoli® storage products and IBM SONAS embody the tenets of Smarter Storage and can help address immediate information infrastructure needs and prepare for the future.

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 140,000 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 Partner 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.
Oracle Fusion Middleware

Oracle Fusion Middleware is a comprehensive family of products ranging from application development tools and integration solutions to identity management, collaboration, and business intelligence reporting. Oracle Fusion Middleware provides the critical business innovation platform that enterprises need to ensure corporate growth, insight, and control.

Oracle Fusion Middleware uses a “hot-pluggable” architecture which allows easier integration to existing applications, even if they are from other software vendors. Figure 1 shows an overview of the Oracle Fusion Middleware architecture. The major components of Oracle Fusion Middleware are described in more detail below. Oracle Fusion Middleware can enable you to maximize the processes and applications that drive your business today and provide a foundation for innovation in the future.

Figure 1. Oracle Fusion Middleware architecture
Cloud Application Foundation

Cloud application foundation provides an application infrastructure for private and public cloud deployments. Centered on Oracle WebLogic Server, it blends innovative technology with modern Java standards to deliver a converged cloud platform. It is the high-availability, high-performance foundation for Oracle Fusion Middleware.

Oracle WebLogic Server incorporates clustering and caching technology, which increases application reliability, performance, security and scalability. In addition to Oracle WebLogic, Oracle combines cloud infrastructure components into the Oracle cloud application foundation, including: Oracle Virtual Assembly Builder, Oracle Coherence, and Tuxedo.

Oracle Virtual Assembly Builder works with Oracle WebLogic Server to increase the efficiency of application virtualization. By packaging multiple software components into a single assembly—a self-contained virtualized unit—Oracle Virtual Assembly Builder allows users to quickly and easily design and deploy multi-tier applications to virtualized environments, both conventional and cloud.

Oracle Coherence is an in-memory data grid solution, enabling organizations to predictably scale applications by providing fast and reliable access to frequently used data. With support for Java, .NET, C++, and REST clients, Coherence provides data caching, data replication, and distributed computing services. It relieves overloaded data sources, simplifying management and improving performance for queries, transactions, and events. Oracle JRockit is a high performance Java Virtual Machine designed to run Java applications on multi-core processors with higher and more predictable performance.

On IBM Power Systems and IBM zEnterprise running Linux, Oracle Fusion Middleware utilizes IBM's Java which is optimized to fully leverage Power Systems and zEnterprise hardware characteristics. The commonality of the design and implementation of IBM's Java accelerates Oracle's adoption of IBM's most current Java technology.

In addition, there is also Oracle Tuxedo, which runs legacy, mainframe, and non-Java applications written in the C, C++, and COBOL languages that have transaction reliability, scalability and performance requirements. Oracle GlassFish Server enhances the value of Oracle Fusion Middleware software for developers by accelerating development practices and decreasing application time-to-market.
Service-Oriented Architecture and Business Process Management

Service-Oriented Architecture (SOA) is a software development and architecture methodology that creates a modular, re-usable approach to applications development; makes it easier to integrate systems with each other; and reduces the need for costly custom development. Oracle SOA Suite is a suite of middleware software products used to create, deploy, and manage applications on a Service-Oriented Architecture including Oracle JDeveloper, Oracle BPEL Process Manager, Oracle Web Services Manager, Oracle Business Rules, Oracle Business Activity Monitoring, and Oracle Service Bus. Oracle Business Process Management Suite is a suite of software designed to enable business and IT professionals to design, implement, automate, and evolve business processes and workflow within and across organizations.

Data Integration

Oracle’s data integration offerings consist of Oracle GoldenGate, Oracle Data Integrator, and Oracle Enterprise Data Quality products. Oracle GoldenGate is a high performance data movement and continuous availability solution designed to capture transaction records on one system and to move and apply them to other systems with low impact on system and network performance. Oracle Data Integrator is an extract-transform-load (ETL) solution that enables users to extract data from one system, transform it from the source system’s format to a target system’s format, and load it into the target system (such as a data warehouse). Oracle Data Integrator also includes big data capabilities to transform and load unstructured data from NoSQL or Hadoop environments into an Oracle Database. Finally, Oracle Enterprise Data Quality enables users to profile any type of data (customer or product-oriented) and to clean it using a variety of automated matching and cleansing rules making the data more reliable and more accurate.

Content Management, Portals and Social Networks

Oracle WebCenter delivers a complete user engagement platform for social business, connecting people and information. It brings together a complete portfolio of portal, web experience management, content, social and collaboration technologies into a single product suite. Oracle WebCenter improves customer loyalty and sales by helping marketing-driven organizations deliver contextual and targeted web experiences to users and gives employees anytime, anywhere access to information and applications in context of an interaction and business process through portals and composite applications. Oracle WebCenter helps people work together more efficiently through contextual collaboration tools that optimize connections between people, information and applications while ensuring users have access to the right information in the context of the business process they are engaged in.
Business Intelligence

Oracle Business Intelligence (BI) is a comprehensive set of analytic software products designed to provide customers with the information they need to make better business decisions. Oracle’s software Business Intelligence products include Oracle BI Suite Enterprise Edition, a comprehensive query and analysis server; Oracle Essbase, an online analytical processing (OLAP) server; Oracle BI Publisher, a self-service production and operational reporting tool; and Oracle Real-Time Decisions, a real-time data classification and optimization solution. Users can access these tools from a variety of user interfaces including browser-based interactive dashboards; ad hoc query and analysis; proactive detection and alerts integrated with e-mail; Microsoft Office integration including support for Excel, Word, and PowerPoint; and mobile analytics for mobile and smart phones.

Development tools

Oracle JDeveloper is an integrated software environment that is designed to facilitate rapid development of a variety of different types of applications using Oracle Fusion Middleware software and popular open source technologies. Oracle JDeveloper software provides support for developing Java applications; web services, composite SOA applications and business processes; rich user interfaces using AJAX/DHTML and Flash technologies; and websites using popular scripting languages. Oracle JDeveloper software also provides comprehensive application lifecycle management facilities including modeling, building, debugging, unit testing, profiling, and optimizing applications and is integrated with the Oracle Application Development Framework software, which provides a declarative framework for building business applications, and popular open source tools, including Eclipse and NetBeans.

Identity Management

Oracle’s identity and access management software products are designed to enable customers to manage internal and external users, secure corporate information from potential software threats and streamline compliance initiatives while lowering the total cost of their security and compliance initiatives. These software products include a lightweight directory access protocol (LDAP) directory service to store and manage user identities and policies; identity provisioning to provision users and roles in multiple enterprise applications and systems; access management to manage access control and entitlements for customers, partners, and employees; and identity analytics products to audit and identify users attempting to access systems for which they are not authorized.
IBM offerings and Oracle Fusion Middleware

Oracle Fusion Middleware is supported on various IBM server and storage product lines. Given the complexity of the combinations that are possible with Oracle Fusion Middleware components and the different operating systems, servers and storage products from IBM, we will not attempt to provide a comprehensive compatibility list here, but will provide references to sources of supported platform information.

In general whenever an Oracle Fusion Middleware component is supported on Microsoft® Windows® or a Linux® distribution, that component is then supported on IBM System x servers, BladeCenter Intel processor-based blades, and IBM PureFlex System Intel processors-based compute nodes. In addition, the vast majority of Oracle Fusion Middleware components are supported on IBM Power Systems servers and PureFlex POWER processor-based compute nodes with the AIX operating system. This support can vary slightly depending on the AIX version. Several components of Oracle Fusion Middleware are also supported on Linux running on IBM System z servers, notably the Oracle Weblogic Server.

The combination of supported Oracle Fusion Middleware products changes constantly as more testing is completed. An up-to-date list of Oracle Fusion Middleware components and the platforms Oracle certifies them to run on can be found at: www.oracle.com/technology/software/products/ias/files/fusion_certification.html

The most up-to-date platform support information for Oracle Fusion Middleware can be found on the My Oracle Support Web Site (https://support.oracle.com/CSP/ui/flash.html). To view this support information log on and click on the “Product Certifications” tab. This site also answers many questions related to Oracle Fusion Middleware.

Given the complexity of the support issues we also recommend consulting the IBM Oracle International Competency Center at ibmoracle@us.ibm.com for the latest support information regarding Oracle Fusion Middleware with IBM products.
Sizing Oracle Fusion Middleware with IBM systems

Requesting a sizing estimate for Oracle Fusion Middleware running on IBM servers and storage products follows the same procedure as for any other Oracle solution running on IBM systems. The first step is to send the Oracle Fusion Middleware sizing request to: eSizings@us.ibm.com. Sizing estimates will be customized for your environment and returned to you. Your IBM or IBM Business Partner representative can also request a sizing estimate for you using this process.
For more information
To find out more about joint solutions from IBM and Oracle, please contact an IBM sales representative representative at 1-866-426-9989, or visit us at:
ibm.com/solutions/oracle
ibmandoracle.com

For more information about the IBM PureFlex System family, visit:

For more information about the IBM System z family, visit:
ibm.com/systems/z/

For more information about the IBM System x family, visit:
ibm.com/systems/x/

For more information about the IBM BladeCenter family, visit:
ibm.com/systems/bladecenter/

For more information about the IBM Power Systems family, visit:
ibm.com/systems/power

For more information about IBM System Storage products, visit:
ibm.com/systems/storage/

For more information about IBM Java and AIX, visit:
ibm.com/developerworks/java/jdk/aix/service.html

For more information about Oracle Fusion Middleware, visit:

1 Based on IBM client experience compared to existing offering