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Executive Summary

Oracle is the only company that delivers all the pieces needed to create high-performance, scalable application server deployments at lower cost and with less risk. From application servers, enterprise applications, and operating environments, to virtualization and management tools integrated with innovative computing systems, storage, and networking solutions, Oracle integrates, optimizes, and tests it all. Now organizations can take advantage of the unique characteristics of the Oracle Optimized Solution for Oracle WebLogic Server to create a less complex, more agile Web service infrastructure that is easier to deploy and manage, adapts quickly to changing business conditions, and costs less to run.

Introduction

Enterprises around the world experience various challenges in deploying, maintaining, enhancing and budgeting for all the applications they provide to their customers, employees, and various constituents. These challenges often include

- Speed new web applications into service
- Performance and feature limitations of older systems
- Bottlenecks caused by growing numbers of concurrent users
- Security and compliance
- Rising support and management costs caused by server sprawl and complexity
The Oracle Optimized Solution for Oracle WebLogic Server is a powerful, transformational approach to deploying enterprise applications. It provides for faster application deployment delivering the performance, capacity, and security requirements organizations need while reducing costs, deployment delays, and complexity.

This solution’s pretested, highly scalable architecture includes comprehensive documentation about best practices that reduce sizing, configuration, ordering, and testing efforts, lowering the risk of in-service downtime. Specifically, the Oracle Optimized Solution for Oracle WebLogic Server enables

- A superior user experience with vastly improved response times and batch processing, plus massive scaling to meet extreme demand. Built on Oracle’s SPARC T5 and T4 server family, the solution can easily scale to meet even the most demanding application requirements.

- Reduced risk. Leveraging documented best practices enables faster deployment than if an “in-house” solution is built and creates a blazing-fast platform upon which to deploy applications, while lowering the risk of those applications going down due to improper initial setup. Additionally, critical compliance concerns are addressed at every layer, with the world’s fastest, most complete set of encryption ciphers engineered directly into the server hardware, providing—at no additional cost—virtually zero-overhead application hardening.

- Lower TCO by reducing the number of systems required to run Java applications. Consolidating IBM WebSphere on Power7 workloads onto fewer SPARC T5 servers results in dramatically lower licensing, management, and operational costs. Based on benchmarks and tests, the SPARC T5 server could accommodate 1.7X more work per core than comparable IBM Power7 systems, with less acquisition and operating costs.
The Challenge of Providing Global Web-Based Services

In today’s hyper-competitive economy, opportunity is everything. Whether delivering goods or services, creating new products, or ensuring customer satisfaction, providing timely access to vital applications and services is key to success. For example, business partners need real-time visibility into the shared global supply chain, and customers want to learn about and buy products and resolve warranty or service issues in a timely manner. As a result, Web-based applications must be available to global users around the clock—and they must be kept secure from individuals looking to harm or embarrass the company or its employees, suppliers, or customers. Tackling these challenges requires an agile, secure application server platform that delivers high performance and availability.

Oracle Optimized Solution for Oracle WebLogic Server

The Oracle Optimized Solution for Oracle WebLogic Server brings together an industry-leading Web application server, and Oracle’s SPARC T4 and T5 servers. Providing a framework for rapidly building and deploying mission-critical Java Platform, Enterprise Edition (Java EE) applications, Oracle WebLogic Server provides a complete set of services and handles many details of application behavior automatically, without requiring application modification.

Though day-to-day tasks concern the management and deployment of applications, the initial choice of the proper hardware is critical for long-term “ease of living” with a computing environment. That is why it is extremely important to understand why certain hardware platforms are better at running application services than other platforms, because all platforms are not equal. Oracle WebLogic Server is specifically designed to take advantage of the high-performance, highly threaded microprocessors found in Oracle’s SPARC T-Series server line. Providing extreme thread performance, a single-processor SPARC T-Series server can host a large number of applications safely and effectively—and have room to grow—while containing licensing costs to the exact hardware needed. When demands rise, up to eight processors can be deployed for greater compute capacity, and clustered configurations can be created for greater scalability or high availability, as shown in Figure 1.
Figure 1. The Oracle Optimized Solution for Oracle WebLogic Server hosts thousands of Web applications, reducing the costs of floor space, electricity, cooling, and administration in the data center.

Consolidate the Data Center

In a traditional deployment model, getting services running and keeping them safe means running one application per physical server. As a result, to add an application, administrators add a new server to the data center and spend time installing and provisioning the operating environment and application. Hundreds of applications later, the result is a vast field of server sprawl. Data centers everywhere are often almost full to capacity, with many reaching the limits of their power and cooling, yet individual servers remain underutilized; a vast amount of computing capacity is sitting untapped.

The Oracle Optimized Solution for Oracle WebLogic Server provides an ideal deployment platform that helps reduce data center sprawl without sacrificing performance by

- **Saving space.** Using the Oracle Optimized Solution for Oracle WebLogic Server, IT organizations can reclaim valuable data center floor space. Key Oracle technologies—such as built-in virtualization tools for servers, storage and networking—help IT staff deploy more services on the platform to reduce the overall data center footprint. Virtualization technology enables a large number of Web services to be hosted safely and simultaneously; ensuring problems with one application do not impact others running on the system. Each application can be assigned dedicated system resources, and isolation mechanisms limit exposure to security issues to keep applications and data safe. As a result, IT organizations can consolidate many applications onto a single system with room for expansion, while reducing power and cooling costs and reclaiming value data center floor space.
• **Providing predictable performance.** Consolidation fears stem from the worry that too many applications on a system will degrade overall performance. The SPARC T4 and SPARC T5 servers used in the Oracle Optimized Solution for Oracle WebLogic Servers employ an innovative processor architecture that takes the worry out of application performance. Unique chip multithreading capabilities support a large number of very fast threads, enabling applications hosted by Oracle WebLogic Server to deliver the performance needed on single server.

**Reduce Application Deployment Time**

IT organizations are increasingly delivering business applications as Web services. As this trend continues, applications that once served only employees are transitioning to network-based, self-service solutions that support global customers, partners at all locations on the supply chain, and a worldwide workforce. Purchasing, configuring, provisioning, and deploying these systems and Web services can be a time-consuming and complex task. Lengthy and intricate integration and testing processes, combined with the opportunity for human error, can introduce risk into the IT infrastructure as solutions are built, tested, and deployed. With the Oracle Optimized Solution for Oracle WebLogic Server, IT organizations can tackle these challenges head on and get Web services into production in less time and with less risk.

• **Deploy services 4x faster.** By deploying the Oracle Optimized Solution for Oracle WebLogic Server, IT organizations can deliver Web applications with speed and quality. Once the initial system is deployed, new Web services can be added very quickly, because the hardware is already in place and operational. Systems can be partitioned into isolated environments to run new applications without impacting production services. Because the systems offer massive vertical scalability, they can be expanded over time to provide greater compute power and storage capacity as demand for Web services grow. By preselecting hardware and software components, and integrating them into an optimized solution stack, this tried-and-tested solution reduces deployment time. Indeed, by using SPARC T-Series servers and applying proven best practices that are documented by Oracle, IT organizations can reduce time to service by months.

• **Eliminate implementation errors.** By eliminating the human error that could result in significant troubleshooting and time delays, the Oracle Optimized Solution for Oracle WebLogic Server helps ensure that services get up and running quickly and run right the first time.

• **Minimize deployment risk.** Risk is inherent in any service deployment. Having the right platform underneath it all can mean the difference between failure and success. Using a complete package that is designed and tested to work together is the best way to minimize risk and ensure business continuity and service availability. Documented best practices and new management features in Oracle Solaris 11 ensure components and patches are identified and verified to work together, minimizing the likelihood of errors that can cause unplanned downtime. In addition, IT organizations can take advantage of Oracle’s Advanced Customer Support Services. Oracle technology experts can further support implementation and deployment activities following the best practices outlined by the solution.
Get More Work Done at a Lower Cost

In times of economic uncertainty, IT budgets tend to shrink and support for capital and operating expenditures are scarce. The Oracle Optimized Solution for WebLogic Server can help organizations save at every level.

- **Upgrade performance.** Increase capacity and responsiveness for Java applications by moving to a SPARC T5 processor–based server from Oracle. Thanks to enormous advantages in core count per CPU and uprated clock speeds, the inherent advantage of SPARC T-Series servers becomes obvious when executing sophisticated mixes of batch and concurrent workloads, as shown in Figure 2.

![Figure 2](image)

Figure 2. This graph illustrates that Oracle’s SPARC T5-8 server with WebLogic and Solaris 11 performed markedly more transactions per core in a third-party performance test compared to IBM's best-of-breed WebSphere/AIX/Power7 benchmark solution.

- **Reduce costs in the data center.** Consolidating applications onto fewer servers enables IT organizations to save on data center space, power, and cooling.

- **Save on licensing.** Solutions from other vendors require expensive add-on software or hardware components to deliver key functionality. For example, third-party virtualization software requires licenses to be purchased and resources to be allocated and managed for each virtual machine added. Other vendors, such as IBM, add a line item charge for the operating system for every server purchased, or charge extra for virtualization capability. In addition, security-conscious organizations must acquire expensive cryptographic accelerator cards and related software to take advantage of fast encryption. In contrast, Oracle builds virtualization and encryption into the platform, and includes the operating system at no extra charge.

Rest Assured with Industry-Leading Security

Engineering core microprocessors, such as the SPARC T5 processor, takes years of design work, and decisions about what goes into such processors are not made lightly. Since the first SPARC T-Series
processor came to market in 2001, cryptographic acceleration has been an integral part of the
microprocessor design for an extremely good reason.

Data that traverses unsecured networks is open to many types of attacks. Once a corporate network is
compromised, skilled hackers can break into systems and applications that are vital to running the
business, and they can steal trade secrets or private, privileged information about customers and
employees.

Oracle Solaris, the foundation of the Oracle Optimized Solution for Oracle WebLogic Server, provides
a sophisticated network-wide security system that controls the way users access files, protect system
databases, and use system resources—all while retaining a detailed audit trail of every system event.
Oracle Solaris builds in advanced security features—such as authentication, data integrity, data privacy,
and single sign-on capabilities—so that tampering; snooping, and eavesdropping cannot compromise
corporate data or server transactions. Oracle Solaris partners with the built-in capabilities of the
SPARC T-Series processors to bring together the best of both worlds: hardware and software designed
to work together to deliver value to customers. Oracle provides this functionality at no added cost,
believing that security-at-speed is a cornerstone for protecting customers’ business and operations
through advanced security features.

Rely on a Solid Foundation

The Oracle Optimized Solution for Oracle WebLogic Server delivers Web application availability. The
components in the solution deliver reliability and availability features that promote service continuity.

- **Reliable.** Reliability features come standard in Oracle’s SPARC T4 and SPARC T5 servers. Every
server in the cluster features automatic recovery with instruction retries, error correction code
(ECC)—protected memory, data path integrity, register protection, and memory mirroring to ensure
systems continue to operate. This means less downtime and more proactive maintenance rather than
reactive troubleshooting.

- **Available.** Clustering builds in redundancy of every major system component, including the network
infrastructure and storage systems. System partitioning and electrical isolation ensure issues in one
component cannot affect other components. In addition, virtualization technologies built into the
operating environment enable application consolidation without fear that services will consume
system resources or otherwise impact one another. Together, these built-in technologies deliver the
superior availability required by a 24x7 IT infrastructure.
Conclusion

Successful global companies must deploy new Web applications quickly, make them available around the clock, and keep confidential data secure. The Oracle Optimized Solution for WebLogic Server provides a framework for building and deploying Web applications quickly. Even the smallest configuration can host many applications at the same time—safely and securely—and can be expanded to increase capacity or availability. Deploying the Oracle Optimized Solution for WebLogic Server provides the Web services deployment functionality global companies need, while providing consolidation benefits and cost savings.

Resources

More information on the Oracle Optimized Solution for Oracle WebLogic Server and related technologies can be found at the references listed in Table 1.

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<th>TABLE 1. REFERENCES FOR MORE INFORMATION</th>
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