



GIVE ME 5!

Consolidate to new UltraSPARC® IV+ processor-based systems and gain up to 5 times increased performance over your older Sun Fire™ UltraSPARC systems

Executive Overview



Enterprises can reduce costs and complexity in their data centers and improve performance, utilization, and manageability, by consolidating their existing servers to Sun Fire™ servers with Sun UltraSPARC® IV+ processors and the Solaris™ 10 Operating System.

Business Demands, IT Constraints

The combination of a distributed computing environment and the organic growth of server-based applications means that many enterprises now find themselves with a proliferation of servers in the business applications tier of their IT infrastructure – server sprawl. This brings the risks of excess costs, compatibility issues, and sluggish application performance, all of which must be urgently addressed in order to maximize application uptime, enhance service delivery and ensure that best use is made of resources.

The mission-critical databases and applications that enterprises rely on – including Enterprise Resource Planning (ERP) systems, Computer-Aided Design (CAD), production or management modules, and the Customer Relationship Management (CRM) systems that underpin call and contact centers – demand high-performance, high-availability, scalable platforms, that can be managed, monitored and upgraded efficiently.

To deliver against these requirements, resources must be streamlined and consolidated, but the options for doing so are complex. Consolidation must be

achieved against the ever-present pressures to protect existing investments and ensure there is sufficient scope within the business application IT infrastructure to handle future growth.

Sun – the Consolidation Expert

By working with Sun to consolidate disparate resources into a single, coherent infrastructure, enterprises can cut costs and complexity while improving resource utilization and performance, and ensuring sufficient capacity to handle future growth. Sun has the expertise, technology, and proven methodologies to help enterprises consolidate resources effectively – whether they have existing Sun hardware or have assets that include other vendors' equipment.

Consolidation – a Record of Success

Sun has successfully delivered consolidation solutions to global Fortune 500 companies, helping them save millions of dollars. Sun has also saved more than \$11 million annually in maintenance and operating costs by consolidating its own internal systems.

Platform for Consolidation

Sun's rock-solid UltraSPARC® IV+ processor-based Sun Fire™ servers run the Solaris™ 10 Operating System and deliver industry-leading performance and scalability, ensuring the highest uptime for critical applications that enterprises depend on. Sun's customers benefit from being able to deploy innovative new applications and services with more agility and less risk, while protecting their existing investments in IT infrastructure.

Sun UltraSPARC® IV+ based servers provide a powerful consolidation platform that is designed and optimized to excel in demanding environments, and is suitable for any size deployment where high scalability and high availability matter. Sun Fire™ servers offer virtually unparalleled maturity, stability and long life; and hold the industry's best record for application and hardware compatibility. Consolidating to Sun Fire V490–E25K servers positions the enterprise to take advantage of further performance improvements as they become available, without changing their existing applications.

Great Asset Protection

“This announcement of yet another no-hassle SPARC system upgrade provides great asset protection to Sun’s huge base of applications and customers.”

Gordon Haff, Senior Analyst
Illuminata

Improve Performance and Enhance Productivity

An important outcome of server consolidation in the business tier should be significant gains in application performance, leading to enhanced business productivity. Installing servers with more powerful processors enables database-driven applications like CRM and ERP systems, CAD and other computer-aided modules, to process data much more quickly, enabling users to work faster and efficiently.

By consolidating to Sun Fire™ servers in the V490–E25K range with UltraSPARC® IV+ processors, enterprises will see significant gains in throughput performance:

- Five times as fast as Sun UltraSPARC III-based systems
- Almost twice as fast as Sun UltraSPARC IV-based systems

Faster Performance with Half the Processors

“A rack of our UltraSPARC III-based systems has now been reduced to a single file cabinet – with no re-coding or recompiling needed to upgrade to Sun’s new UltraSPARC IV+ servers. We’re getting faster performance with the new UltraSPARC IV+ Sun Fire V890 server over our previous UltraSPARC III system that had twice as many processors.”

Chuck Sears, Director, Research Computing
Oregon State University,
College of Oceanic and Atmospheric
Science (COAS)

Multi-threading for Performance

It’s the Chip-Multithreading Technology (CMT) in Sun Fire UltraSPARC IV+ processors that drives dramatic increases in throughput and system utilization, because it enables compute, packet-processing and switching tasks to run concurrently, rather than sequentially as in a single-threaded system.

To increase performance further still – up to 50% more – enterprises can consolidate to the Solaris™ 10 Operating System on their Sun Fire servers. The Solaris 10 Operating System offers Dynamic Tracing (DTrace) for real-time data collection and analysis of production systems. This enables quick identification of performance bottlenecks to speed up applications by as much as 300%.

Do More with Less

These gains in performance and productivity can be achieved with no increase in price or server footprint. Depending on the model, Sun Fire V490–E25K servers can be easily upgraded in-chassis for the cost of a simple upgrade board, bringing immediate improvements for minimal downtime.

Expand Capacity While Protecting Investments

Reducing server sprawl in the data center and enhancing performance and productivity are important goals, but consolidation goes a step further, by making it possible to do more with less. Intelligent consolidation of servers in the business tier brings increased capacity for mission-critical applications, providing long-term stability and improving uptime. But, crucially, it also enables enterprises to plan ahead, ensuring sufficient flexibility and capacity extension for easy deployment of new applications in the future, enabling rapid response to evolving business needs.

Consolidate with Minimal Risk

Naturally, enterprises will want to be confident that by consolidating, both existing hardware investment and legacy applications will be protected, and that long systems life will be assured. And, clearly, they will want to be sure that consolidation will not cause any downtime of their vital applications.

No Recompilation of Existing Applications

“Using Sun’s new UltraSPARC IV+ Sun Fire V890 server, we have noticed significant performance improvements over the previous UltraSPARC III-based server. The same software applications running on old servers have been easily and quickly ported to new servers, with no recompilation.”

Alain Barlier, OAM Solution Architect
Nortel France

Sun Fire servers, with UltraSPARC IV+ processors, provide the best, most scalable platform for long-term asset protection. Enterprises with older Sun systems – UltraSPARC III and IV – can consolidate them onto Sun Fire V490–E25K servers and avoid business disruption. Existing applications will run without the need to recode or recompile – Sun is unique in offering application binary compatibility, to maximize the useful life of installed Sun systems, and it has done so for over nine years.

Consolidating older Sun systems to Sun Fire V490–E25K servers protects legacy applications running on the Sun Solaris™ 9 OS; while the Solaris 8 OS can run in a separate domain on some Sun Fire servers. This gives a transition and investment protection path for existing Sun users who are moving towards the Solaris 10 Operating System.

Non-disruptive Upgrades

Sun also makes it easy to add capacity to existing Sun servers with in-chassis Uniboard upgrades to UltraSPARC® IV+ processors, which can even be performed without taking the servers offline. And Sun UltraSPARC III and IV processors can be mixed and matched with UltraSPARC IV+ processors – even within the same domain – without compromising performance. All these options make incremental growth possible without having to dispose of existing hardware investments, while Sun Fire™ enterprise server upgrade programs help protect current investments and provide flexibility for the future.

SunSM Upgrade Advantage Program

The comprehensive and flexible Sun Upgrade Advantage Program reduces the costs of acquiring Sun Fire V490-E25K servers by extending superior upfront trade-up allowances for Sun and other vendors' products. This gives enterprises a cost-effective way of taking advantage of the higher throughput and utilization of these servers when they consolidate.

Increase Availability, Utilization, and Manageability

In addition to improving performance while protecting existing investments, enterprises need to ensure maximum availability of mission-critical applications in order to better support business needs. Server utilization levels and manageability are also key issues – reducing the downtime associated with maintenance, fault detection and upgrades is vital in order both to achieve cost-savings and reduce the need for human intervention.

Virtualize to Utilize

Consolidating to Sun Fire V490-E25K servers can drive up resource utilization levels by as much as 80% with minimal overhead, using Sun Solaris™ Containers. These provide an ideal solution for server consolidation, enabling easy and cost-effective partitioning of a single instance of the Solaris Operating System into multiple containers, each of which can run an

application. Using containers enables better, more efficient utilization of system resources, by assigning them to services based on current business requirements instead of peak usage.

Respond on the Fly

Sun's unique fault-isolated Dynamic System Domains and Dynamic Reconfiguration enable resources to be moved and shared online to meet demand, to make even better use of available resources. Dynamic Reconfiguration technology provides for online system maintenance and upgrades – with no downtime – reducing the impact on the business, and offering the potential for cost-efficiencies and savings; while Predictive Self-Healing significantly reduces downtime by detecting and preventing faults.

Fault Detection and Prevention

Predictive Self-Healing detects and prevents faults using a systemic approach, virtually eliminating service interruptions by:

- Automating diagnosis to reduce human intervention
- Replacing error messages with messages that identify clear causes
- Allowing systems to recover in some cases, rather than fail
- Providing predictive analysis of potential future failures
- Improving diagnostic technology to reduce – or even eliminate – downtime
- Further reducing the already low soft-error susceptibility

Management of servers is streamlined using Sun™ Management Center, a single console that helps increase service levels while reducing the cost and burden of administration. Sun Management Center provides in-depth monitoring and advanced management capabilities to enhance system performance, reliability, security, and utilization.

Protect Applications With Built-in Security

Consolidating to the Solaris Operating System – the most secure Unix operating system on earth – brings built-in security features that protect the security of applications and the sensitive data they hold. An integrated firewall and file signature integrity checker come as standard with the Sun Solaris 10 Operating System, ensuring protection against Denial of Service (DoS) attacks.

In addition, cross-enterprise security can be enhanced with the Solaris Security toolkit, that uses an audit capability to further harden the Solaris Operating System and secure Solaris Operating System platforms. Customers also have access to the Java™ Enterprise System for additional security functionality.

The Ideal Consolidation Platform

An outstanding solution is required to solve the problems of cost and complexity in mission-critical business tier IT environments, while enhancing service delivery, manageability and flexibility. Sun Fire enterprise servers offer an unrivalled consolidation platform that solves IT problems while uniquely supporting business objectives, today and tomorrow.

Data from a recent customer study reveals that Sun Fire Servers offer a lower total cost of ownership (TCO) and a longer life than IBM pSeries servers, potentially saving hundreds of thousands of dollars over the life of the system:

- Up to 33% TCO savings over a five-year period can be achieved by deploying Sun Fire UltraSPARC servers against comparable IBM pSeries servers

Sun Fire™ Server Family

Features	Mid-range Servers					High-end Servers	
	Powerful, enterprise-class features for the data center					Industry's most scalable, dependable data center servers	
	Sun Fire™ V490	Sun Fire™ V890	Sun Fire™ E2900	Sun Fire™ E4900	Sun Fire™ E6900	Sun Fire™ E20K	Sun Fire™ E25K
UltraSPARC® IV+ 1.5Ghz processors	up to 4	up to 8	up to 12	up to 12	up to 24	up to 36	up to 72
Concurrent threads	8	16	24	24	48	72	144
Solaris™ 9 and 10 OS	✓	✓	✓	✓	✓	✓✓	

Take action now

5 times the performance, better availability, minimal risk and lower costs. Contact your Sun Account Manager today, or visit sun.com/consolidation to find out more.

