



## REVOLUTIONIZING SERVER ECONOMICS

### Terabyte-Scale Computing Without the Premium

*Large-scale servers offer significant advantages in the areas of application performance, simplified data center operations, and higher server utilization for large, complex workloads or for consolidating smaller servers. Historically, large-scale servers have had a higher cost per unit of performance, therefore limiting large servers to specialized workloads. Oracle has re-engineered server economics, enabling near-linear pricing from two-processor SPARC T5 servers to the terabyte-scale SPARC M6-32 server. Oracle customers can deploy any workload onto a larger scale server, obtaining better performance, better efficiency, and less complexity without a price premium over small servers.*

#### HIGHLIGHTS

- Revolutionary near-linear pricing removes cost premium for terabyte-scale computing
- Higher performance, higher system availability, and less complexity with large scale servers
- New levels of efficiency and server utilization from consolidation of smaller systems and workloads

#### Terabyte-Scale Computing Advantages

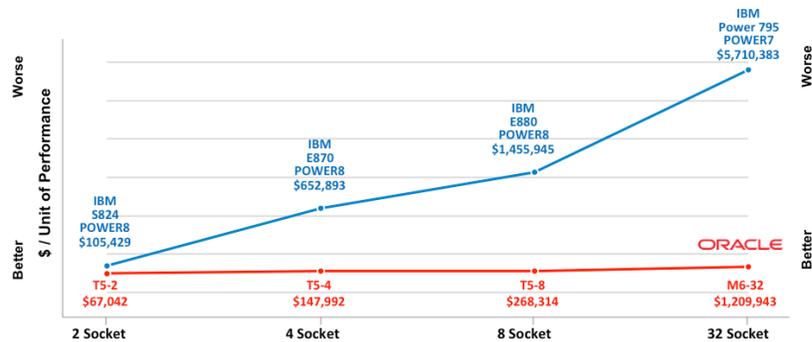
“Scaling up” with large servers—generally SMP servers hosting eight or more processors—provides significant advantages over “scaling out” with many small servers. Higher system performance is available from larger pools of compute resources due to higher bandwidth system interconnects and lower latencies, versus conventional networking across clusters of small servers. Additionally, large-scale servers can be configured with terabytes of system memory, allowing entire databases and applications to be cached in-memory for unprecedented performance levels. Oracle’s SPARC M6-32 server offers up to 32 terabytes of system memory—twice the memory per processor of any other large-scale enterprise-class server— and more than a terabyte/sec of memory or I/O system bandwidth. The system provides terabyte-scale computing without the price premium found on large-scale servers from other vendors.

#### The New Wisdom of Near-Linear Pricing—What Does This Mean?

For a few decades now, conventional wisdom has said that vendors charge a significant premium for larger multiprocessor servers, thereby delivering price/performance that is worse relative to smaller servers. These price premiums have limited big-scale servers to specific workloads for which large compute resources, memory footprint, high availability, or other large-scale server capabilities are required. This trend has led IT organizations to build larger-scale deployments with increasing quantities of smaller networked servers, resulting in challenges to achieve performance, increased complexity, higher costs for high-speed networks, and lower server utilization.

Oracle has created new wisdom with the introduction of the SPARC T5 and M6 servers. Near-linear pricing means that the price/performance of the terabyte-scale SPARC M6-32 server is nearly the same as the price/performance of the SPARC T5-2 server. In fact, the price/performance for all SPARC T5 servers, which scale from two to eight processors, is nearly the same. Oracle customers can now deploy any workload onto larger-scale servers obtaining the advantages of terabyte-scale computing including higher performance, higher

efficiency, higher system availability, and less complexity for nearly the same price/performance as smaller servers.



This chart above illustrates how price/performance across Oracle’s SPARC T5 and SPARC M6 servers is nearly constant. The lines show the price/performance for servers configured with the same amount of memory per processor, but different maximum processor (socket) counts, while the numbers indicate list prices. Other vendors charge high premiums for large servers—regardless of the processor (x86, POWER, Itanium, etc.) on which they are based. As shown in the example above, IBM’s POWER servers still follow conventional wisdom, with a high price premium for larger servers. The revolutionary price/performance introduced by Oracle is made possible by breakthrough engineering, such as the creation of a highly efficient processor interconnect design and the utilization of nonproprietary memory components.

### Increased Server Economics with Server Consolidation

Workloads and applications consolidated onto larger scale servers benefit from shared system compute resources. Consolidating smaller servers can lead to much higher server utilization as excess capacity can be pooled and shared among applications to achieve the highest efficiency levels. Servers used for consolidation must provide high scalability, high availability, and advanced virtualization, so that partitioning into virtual machines can be used to securely isolate multiple application workloads.

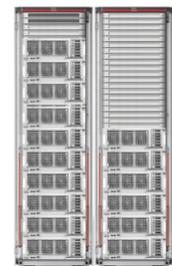
## Re-Engineered Systems Economics

Oracle SPARC M6-32: Fewer Parts, Easier to Manage



Room to Expand Memory 2X

SPARC M6-32 Advantage		SPARC M6-32	SPARC T5-2s, Ethernet Network
<b>136x</b>	Parts	1	136
<b>16x</b>	Servers	1	16
<b>37x</b>	Bandwidth	24 tbps	0.64 tbps
<b>100x</b>	Network Latency	~150ns	~15,000ns
<b>1x</b>	List Price	\$1,209,943	\$1,235,370



The comparison table above shows that, for about the same price, a single SPARC M6-32 server offers a dramatically simpler deployment, while providing much better performance,

than a network of smaller servers. The architecture using SPARC T5-2 servers needs to factor in the cost of expensive, complex, high-performance networking that is necessary to make a cluster of small servers perform like a single high-end system. However, even the most sophisticated conventional technologies available today for networking cannot match the speed and efficiency of the SPARC M6-32 internal system interconnect. A similar argument can be made when comparing an architecture with one SPARC T5-8 server with a cluster consisting of a few smaller servers.

Oracle's new large-scale servers— SPARC M6-32 and SPARC T5-8—are ideal consolidation platforms, delivering the scalability, high availability, virtualization, and system management capabilities to support hundreds of diverse workloads of varying sizes. Oracle customers can benefit from the significant advantages of Oracle's large servers in terms of higher performance, system availability, and reduced management complexity when compared to many smaller networked systems.

## Contact Us

For more information about the Oracle SPARC servers, visit us at [oracle.com](http://oracle.com) or call +1.800.ORACLE1 to speak to an Oracle representative.



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