THE BEST SOLUTION FOR DATABASE PERFORMANCE IMPROVEMENT IS THE LATEST UNIX SERVER FUJITSU M10

Fujitsu M10 server is a flexible and scalable system that delivers high performance and high availability for mission-critical enterprise applications. It is the ideal platform for resolving database performance problems.

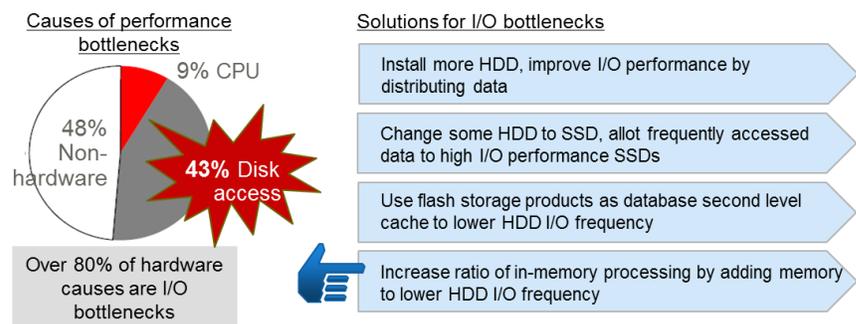## UNMATCHED SCALABILITY, MAINFRAME RELIABILITY, AND INDUSTRY-LEADING VIRTUALIZATION

KEY FEATURES

- This enterprise server has up to 64 processors (up to 1,024 cores) and huge memory capacity (up to 64 TB) for superior enterprise application performance.

- The new SPARC64 X+ processor up to 3.7 GHz and 3.0 GHz SPARC64 X processor, with supercomputer technology, provides the highest level of performance for resource intensive enterprise workloads such as OLTP, ERP, BIDW, SCM, and CRM.

- 1/5 the memory access response time at a maximum, compared with the previous SPARC Enterprise

- The CPU core activation feature economically and rapidly delivers on capacity requirements along with increases in throughput, making it possible to have gradual increases in performance.

- Software-on-chip instructions on the SPARC64 X and X+ processor accelerate key database functions.

- Flexible resource configuration using, physical partitioning, Oracle VM Server for SPARC and Solaris Zones virtualization technologies.

Dynamic Scalability and Performance Enhancement

Corporate Governance, non-stop business operations, system optimization, and environmental impact reductions, are just some of the latest commercial and operational demands on systems. When planning or implementing new servers, technology central to the business requires careful scrutiny to ensure modern requirements are met and accounted for. Fujitsu SPARC servers meet these requirements head on, right from the design and development of every component. These crucial technologies are further explained in the categories that follow.

If increases in data result in gradual database performance degradation, or batch processing needs more and more time and it becomes difficult to execute it at night, or if performance problems need to be resolved without redesigning the database (tuning) or adding database licenses, Fujitsu M10 is the perfect solution.

Causes of performance bottlenecks

9% CPU
48% Non-hardware
43% Disk access

Over 80% of hardware causes are I/O bottlenecks

Solutions for I/O bottlenecks

Install more HDD, improve I/O performance by distributing data

Change some HDD to SSD, allot frequently accessed data to high I/O performance SSDs

Use flash storage products as database second level cache to lower HDD I/O frequency

Increase ratio of in-memory processing by adding memory to lower HDD I/O frequency

High Speed Memory, High-Capacity Memory

Fujitsu M10 solution uses High-Speed, High-Capacity and Low-Cost Memory, to resolve I/O bottlenecks by processing data at ultra high speeds.

- High-speed memory: Up to 1/5 of the memory access response time (compared to existing models). Because the new SPARC64 X and X+ features embedded memory controllers, the processor and memory are directly connected and designed to provide high-speed access.

- High-capacity memory: 1TB available per CPU. Fujitsu M10 can be configured to deliver an enormous level of memory for a business class server. To properly utilize this superior memory capacity, Fujitsu M10 uses memory capable of high transfer rates and has an increased number of memory buses.

- Low-cost memory: Significantly improved memory pricing. Without sacrificing

reliability Fujitsu M10 memory is priced at the same level as PC server memory. Low cost, high-speed, high-capacity memory installation is made possible with Fujitsu M10.

Direct connection of 16 memory modules to CPU minimizes wiring, resulting in high throughput and low latency
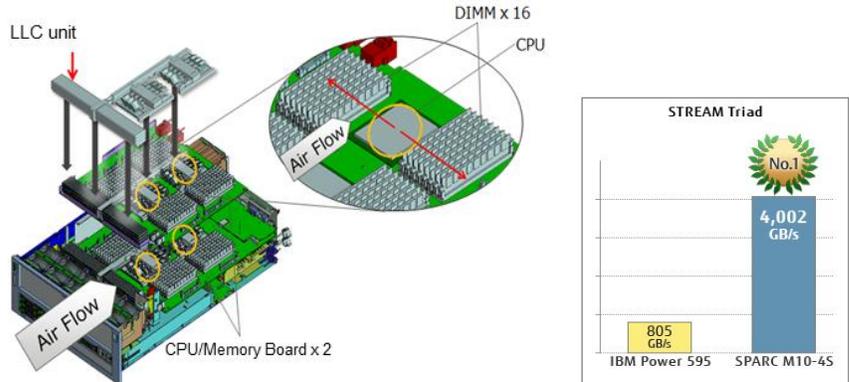
*Measured using STREAM, a benchmark used as a performance index for memory access
*As of 8/16/2013

The combination of Fujitsu M10 and Oracle TimesTen In-Memory Database is 2.8 times faster than SPARC Enterprise, even when the same number of processors are compared (Fujitsu M10-4 and SPARC Enterprise M4000).

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