Case study
KANAMOTO CO., LTD.

»With large memory capacity, we achieved a 10x performance improvement of database processing without needing additional CPU cores.«

Mr. Hiroshi Kumagai, Information System Division Corporate Officer / Division Manager, Kanamoto Co., Ltd.

The customer

Country: Japan
Industry: Rental of construction equipment and sale of steel products
Founded: 1964
Website:
http://www.kanamoto.co.jp/en/

The challenge

With rapid business growth, Kanamoto was experiencing significantly deteriorating database server response times. Online operations were unbearably slow and business user productivity was suffering. The data processed consisted of approximately 500,000 records of 460 types. As processing volume rapidly increased with the strong growth of the construction equipment rental demand, the server infrastructure needed to urgently grow to provide more capacity.

The solution

Kanamoto decided to replace all database servers used for stock inquiries and sales management applications. Fujitsu M10 was selected as the replacement. Configured with large memory capacity, Fujitsu M10 successfully delivered significant improvements in response times without increasing the number of processor cores. This server refresh lead to a drastic reduction in operating costs.

The customer

Kanamoto, based in Sapporo, has been in the construction equipment rental business for half a century. Almost 60% of construction equipment used in disaster prevention and social infrastructure development across Japan is Rented.The Company offers a wide range of construction equipment, including hydraulic excavators and dump trucks, to meet diverse needs.

The challenge

A major challenge was to improve the performance of store-wide online systems used for stock inquiry and sales management applications. With the Japanese government's growth strategy and a revival of public investments in recent years, the demand for construction equipment rentals has dramatically increased. Kanamoto has been receiving a flood of stock inquiries and orders leading to a rapid increase in the load on their systems. Circumstances of slower response at peak-demand times, such as in the mornings and early-evenings at the end of the month, were happening much too frequently.
Mr. Kumagai says, "Our system is used by 1,600 employees at 170 sites nationwide every day. Although efforts had been made to prevent slower response by installing more processors and memory, it was clear that the existing system would soon reach its limits. We came to the conclusion that the deployment of higher performance servers was necessary to achieve drastic improvements."

The solution

With excellent results obtained in advance testing using actual business data, Kanamoto launched a full-scale production database system deployment with Fujitsu M10. The system successfully went into operation in May 2014.
The new system uses Fujitsu M10-4 as primary production servers and the compact Fujitsu M10-1 as standby servers. Fujitsu M10-4 based production servers are configured with 2TB of memory and a Flash Accelerator F80 card. Large memory capacity and the Oracle Database Smart Flash Cache feature reduced disk I/O access and achieved the goal of accelerating database performance.
Support provided by Fujitsu for this project was also highly valued. Mr. Kumagai says proudly, "Even with the complete renewal of important core database servers, the establishment of the system, including

system migration, only took about one month. This is attributed to significant improvements in performance with no need for tuning, enabled by large memory capacity on the servers and utmost efforts made by Fujitsu system engineers towards early completion. We have once again appreciated Fujitsu's high technology expertise."

The benefit

The main requirement for the database server replacement was to improve response times without affecting existing application resources. The aim was to create an environment in which businesses can operate more smoothly while maintaining the same degree of high reliability and availability essential to Kanamoto's business environment.

Fujitsu M10 SPARC servers were selected as the product that met these requirements. Mr. Kumagai says, "We had already been using Fujitsu SPARC servers, and we have complete confidence in their reliability and availability. Our past experience indicates that, when compared to x86 servers, SPARC/Solaris servers are capable of high-speed and stable parallel processing and are suitable for database operations that handles a large volume of data. In addition, Fujitsu M10 is equipped with various functions that can be used for performance acceleration. We therefore decided to choose Fujitsu SPARC servers again without hesitation."

"We wanted to perform database processing in memory for the fastest response possible. In this regard, being able to configure large-capacity memory plus a Flash Accelerator F80 card, Fujitsu M10 can minimize the amount of disk I/O, which would cause delays, and achieve faster processing." explains Mr. Kumagai.

Another decisive factor was the Fujitsu M10's CPU Activation function that can be used for core-by-core capacity and performance growth. This function allows for the activation of additional cores within a processor as processing volume increases, and enables system expansion without interrupting business operations. Mr. Kumagai says, "The demand for the rental of construction equipment is expected to continue to increase. The ability to respond to sudden and unexpected performance enhancement requests is therefore a significant advantage."

Conclusion

Fujitsu M10-based database servers were put into operation, alleviating all capacity-constraint and response performance issues. Mr. Kumagai firmly states, "With large memory capacity, we achieved a 10x performance improvement of database processing without needing additional CPU cores. At present, the database processing is performed almost entirely in memory. The response time during peak hours that used to take around 30 seconds with the previous system was reduced to only about 1 second. Another effect that cannot be overlooked is cost reduction. Despite achieving a significant performance improvement, the system deployment cost was reduced by approximately 20% compared to the previous case. This is mainly attributed to significant reduction in the server memory cost, and the fact that the performance improvements attributed to the Fujitsu M10 server's large memory capacity drastically reduced the need for additional software licenses.

The effects of these improvements are actually felt by business end users. "With the previous system, there were often cases where screen displays were slow and operations took quite a long time. But with the present system, the system response improved and so did the business efficiency in our office." says Mr. Hidemi Shibusa, Head of branch office, Tomakomai Branch, Kanamoto Co., Ltd.. Mr. Yutaka Ito, Group Leader, Front Team, Tomakomai Branch Kanamoto Co., Ltd., adds, "Operations used to take a long time in the early-evening at the end of the month due to slow system response times, sometimes taking 30 to 60 minutes to process a single sales slip. As we must avoid customer delays, we had to give up printing through the system and process sales slips by hand. But now the system operates as efficiently during the peak hours as at normal hours, and the need for overtime work is also reduced."

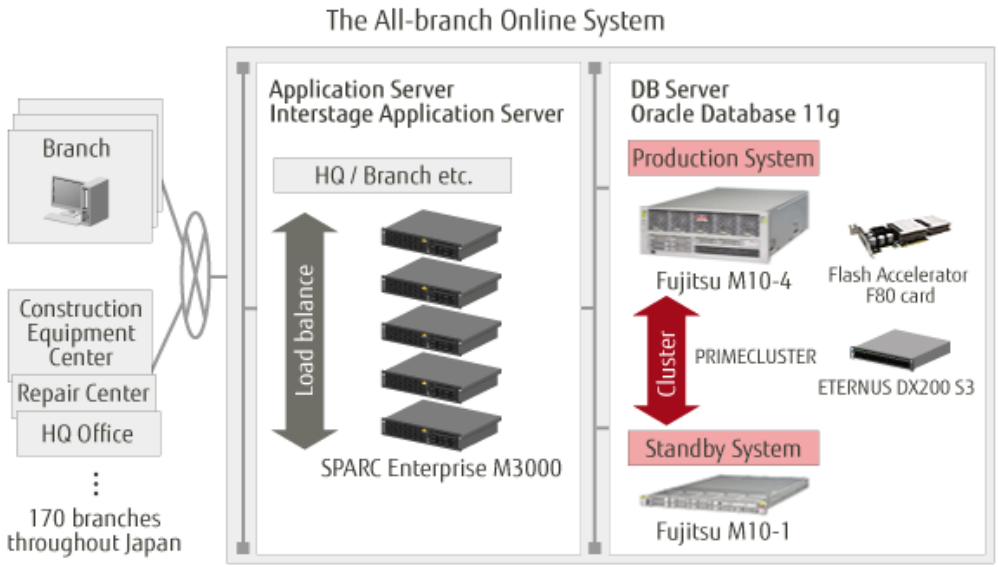
Mr. Kumagai also talks about the plans for the future. "Being a company in the service industry, the ability to collect and use information is crucial for us. ICT is essential for efficiently operating our assets and optimizing our business operations. We will continue to pursue operational excellence by fully utilizing our newly deployed system."

The benefit

- Complete confidence in Fujitsu SPARC server's reliability and availability from past experience
- Capable of high-speed and stable parallel processing compared to x86 servers
- Suitable for database operations due to SPARC/Solaris server's capablity of high-speed and stable parallel processing
- Equipped with various functions that can be used for performance acceleration
- Perform database processing in memory for the fastest response possible
- Configures large-capacity memory plus a Flash Accelerator F80 card
- Faster processing with less disk I/Os
- Performance growth with CPU Activation can respond to sudden and unexpected performance enhancement requests
- System expansion is possible without interrupting business operations

Products and services

- Fujitsu M10-4
- Fujitsu M10-1
- FUJITSU Storage ETERNUS DX200 S3
- Flash Accelerator F80 card
- Oracle Database 11g
- FUJITSU Software PRIMECLUSTER



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Contact
FUJITSU
Address: Shiodome City Center
1-5-2 Higashi-Shimbashi Minato-ku, Tokyo
105-7123 Japan.
Phone Tel: +81-3-6252-2220
Website: www.fujitsu.com/sparc
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