

Windows 2000 Based
Fault Tolerant Server

NEC Express5800/ft series

Case Study

MARUDAI FOOD Co.,LTD

Marudai Food Co., Ltd. has selected the NEC fault-tolerant server Express5800/ft series as the Meat Department Division's stock/storage/retrieval/inventory management server. Previously, they had managed their system using a standard Intel Architecture server, but as their business for meat sales expanded, the need for a higher performance and higher available system arose. Due to its highly reliable hardware redundant configurations and its cost-effectiveness, the Windows 2000 based fault-tolerant server was chosen.

The NEC Express5800/ft series is installed as the stock/ storage/retrieval/inventory management system of the Meat Department Division, Marudai Food Co., Ltd.

Purpose of Implementation

■ Inventory inquiry and storage/retrieval management system for minimizing chance losses:

Marudai Food Co., Ltd. is known for their prepared/perishable food products and processed meat products such as ham, sausage, and bacon, but their sale of unprocessed meat also holds a large share in their overall sales. Since they entered the market at a large scale about 10 years ago, the meat business has grown rapidly, and presently attributes nearly 30 % of the company's entire sales to the sale of unprocessed meat. This stands head to head to their processed meat and prepared food businesses.

To support the unprocessed meat sales business, the NEC Express5800/ft series was implemented into the stock/sales, storage and retrieval management system of the Meat Department Division. In 1997, this management system was constructed to strengthen the Meat Department Division's computer system. Before this new system was made, the management system and the accounting systems co-existed on the same NEC mainframe PX7500. Since the Meat Department Division personnel mainly used these systems, they were not structured to show real-time inventory statuses of the branch offices around the country. In the past, when a customer would contact one of the meat sales offices, they would have had to confirm with the head office if they had meat in stock and wait for a reply before they could continue business negotiations. At times, this resulted in lost business opportunities. "As well as the price, the key to a successful business negotiation in meat sales is how quickly we can respond to orders. To solve this problem, we have constructed a system which enables us to allocate orders and check available meat stock of sales offices, online", states Mr. Akira Suguri, manager of the Information System Department.



Mr. Akira Suguri
Manager of
The Information
System Department

The company's Meat Sales Division purchases meat products from overseas and domestic business partners, and stores these products in about a hundred warehouses all around the country. With the Meat Department Division centralized inventory management, the products can be received from the most delivery-efficient warehouse. With the constructed system, they can now see the warehouse inventory from each of the meat sales offices, as well as allocate orders and transfer products.

In the system built in 1997, they had selected an NEC Express5800 series server (single server) running Windows NT 3.51 with Oracle7 as the platform. The custom applications were developed in Visual Basic. The system was connected to the mainframe, and included stock functions, inventory control functions and storage/retrieval control functions. It had the ability to request product transfer from warehouses, and could exchange delivery instruction data with the distribution companies.

High reliability achieved by hardware duplication

“The system built in 1997 had been running stably without hardware failures or major troubles since it started operations. However, as the number of meat sale transactions grew and the amount of data increased, the system’s processing performance had reached its limit. In addition, even with the redundant configurations of the hard drives through disk array, “if hardware failure were to occur, recovery may take a long time, thus the effects of possible system failure were increasing each day. The fear grew due to the fact that, not only their own company’s operations would be effected by system failure, but the warehousing companies and the distribution companies as well”, Mr.Toru Miyachi, chief examiner of the Information System Department, says.



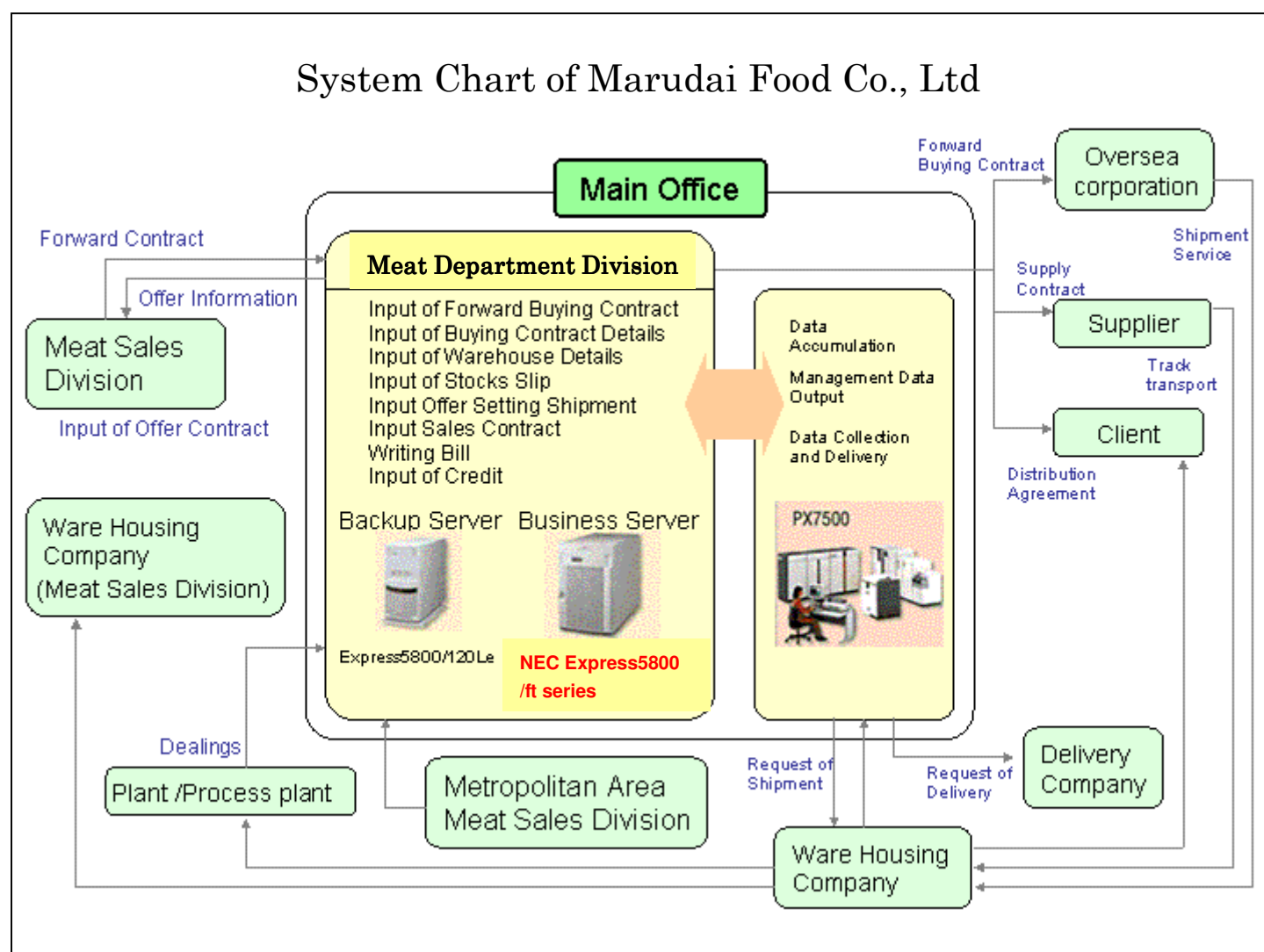
Chief Examiner
Information System
Department
Mr.Toru Miyachi

In 2000, the company considered replacing the system. At first, they were thinking of replacing they system with a duplicated hot standby cluster system. However, hearing that NEC was scheduled to release a fault-tolerant server, they examined the specifications and decided upon it, the NEC Express5800/ft series.

Mr.Yoshihiro Nishimura, assistant chief examiner of the Information System Department, explains the reasons:

“Although they both provide for duplicated systems, the cluster system is duplicated and controlled through software, where as the NEC Express5800/ft series achieves redundancy through hardware, making the structure easy to understand and very user-friendly. The original aim was the achievement of a nonstop system, so we valued the fact that the NEC Express5800/ft series can continue operating even if a failure occurs. In addition, compared to a cluster system, the cost-effectiveness was also appealing.”

In fact, “we had examined several implementation estimates”, says Mr.Miyaji, “and the low-cost was an important factor. Compared to a cluster system, the cost of hardware and software for the NEC Express5800/ft series was actually about 40% less, and with lower development expenses, further cost reduction could make possible”.



Effect of Introduction

■ Attains stable operations by performing detailed tests

After receiving the machine, the company immediately implemented the NEC Express5800/ft series, and after 6 months of testing, started operations in February 2002. Because redundancy was not a concern for the development of applications and middleware, the transition to the NEC Express5800/ft series could be done in a short period of time. However, since Marudai Food Co., Ltd. upgraded the operating system from Windows NT3.51 to Windows 2000 Advanced Server and the database from Oracle7 to Oracle8i, they spent a considerable amount of time testing the applications that they have developed.



Mr. Yoshihiro Nishimura
Assistant chief
examiner
Information
System
Department

“We have known that the reliability of the Windows 2000 system itself has greatly improved since the age of the Windows NT system. However, because this was a two-step major upgrade, thorough testing would be the key to stable operations even though the system works well with the current applications”, Mr. Nishimura explains the reasons for the detailed tests.

Along with the introduction of the NEC Express5800/ft series, they also upgraded the backup system. Formerly, they performed backup procedures by connecting the application server itself to a DAT drive. Now they have implemented the NEC Express 5800/120Le as the system’s backup server and switched to the larger capacity Linear-Tape Open (LTO).

Five months have past since the new system started operations, and there have not been any system troubles.

“The reliability of the Windows 2000 operating system is as we have expected and the hardware is running without failures. Above that, we have attained a feeling of security that the system will run without stoppage during failure occurrences”, says Nishimura, stressing the effects of the NEC 5800/ft series introduction.

Mr. Miyaji highly evaluates the NEC Express 5800/ft series and states, “The NEC Express5800/ft series will be one of our favoring choices when we must implement another non-stop system, or when we must update our system”.

Customer's Profile



Name	Marudai Food Co., Ltd.
Head Office	21-3 Midori-machi, Takatsuki-shi, Osaka
Established	June 1958
Sales	181,423 million yen (at the end of the business year 2001 in March)
Employees	2,041



The main business is comprised of ham, sausage, delicatessen, and unprocessed meat sales. With the head office and the Tokyo branch office as the core, there are 135 sales offices, 14 distribution centers, and 26 major production plants. In order to meet the fragmented needs associated with the advancement of convenience and individualization of food, they have expanded their product categories and items from hams and sausages, which are the backbone of the business (for example, in the perishable product area such as prepared/processed food products, desserts and snacks). They scheduled to enter the yogurt market and start the Kofu branch factory of their child company (100%) Azumino Shokuhin Kobo Co., Ltd.