FUJITSU

Case Study
Dai Nippon Printing Co., Ltd.

Using Fujitsu M10 to revolutionize the central overseas business system, Dai Nippon Printing expanded their global business. After migrating from the HP-UX system batch processing performance tripled and operating costs were reduced by almost 35%.

Dai Nippon Printing Co., Ltd. (DNP) is one of the world's largest printing companies. DNP selected Fujitsu M10 to revolutionize their central overseas business platform in order to expand global business operations.

Forming the core of the new system, Fujitsu M10 was chosen as it not only increased performance compared with the previous system (HP-UX) and stabilized operations, it also reduced costs and provided centralized support. Working closely with DNP, Fujitsu leveraged extensive migration know-how and installation testing from Fujitsu's Trusted Cloud Square, to ensure construction of the system was completed quickly. After installation, the response performance doubled and batch processing performance tripled, while operating costs were reduced by almost 35%.

Overview

"When we investigated Fujitsu M10, the key points considered were not just its high performance, but its operational stability inherited from mainframe reliability, the fact that it embraces the future potential and long-term support of Oracle Solaris, and its compatibility with Oracle Database. Specifically when combined with Oracle Database 11g, Fujitsu M10-1 is able to deliver one-stop-shop support for our business and significantly reduce maintenance costs."

Challenges

- Improve performance of the central overseas business system to expand the overseas business
- Deliver a reduction in overall costs

- Need for fast system construction as support for existing server expires soon

Solutions

- The high performance Fujitsu M10 processor, SPARC64 X, doubled response performance and tripled batch processing performance. CPU Core Activation also allows the business to expand flexibly.
- Combining Fujitsu M10-1 and Oracle Database 11g, (optimal processing combination), drives down maintenance costs, while installing a backup server ensured operations were more efficient. Total system costs were reduced by almost 35%.
- Through close collaboration with Fujitsu, system construction was completed within the strict four month timeline. This was possible leveraging Fujitsu's extensive migration know-how of HP-UX to Oracle Solaris and by performing installation testing at Fujitsu's Trusted Cloud Square.

Industry	Comprehensive printing	
Hardware	UNIX server: Fujitsu M10-1	Storage: FUJITSU Storage ETERNUS DX60
Software	Database: Oracle Database 11g	Highly-reliable platform software: FUJITSU Software PRIMECLUSTER
	Application server: Oracle WebLogic Server	Form design software: SVFX-designer

Installation Background

In order to expand the global business, DNP revolutionized their central overseas business system

When people hear "Dai Nippon Printing", they generally imagine printing products. However, DNP's business extends over a wide variety of fields and is hard to be explained with just one word. An example of this is the aseptic filling system[1] that is used for a third of all PET plastic bottles made in Japan (according to a survey by DNP).

Their products and technology are also used in smart phones and for biometric identification in IC cash cards.

However since being founded in 1876, DNP's strength has remained in their original solutions designed to meld cutting-edge information technology and printing technology together. The business now has approximately 30,000 corporate customers both in Japan and abroad, and has three main business streams: Information Communication (e.g. publication printings and digital signage), Lifestyle and Industrial

Tomoyasu Nagata
Section Head
Overseas System Section
Overseas Business
Promotion Department
Overseas Business
Headquarters
Dai Nippon Printing Co., Ltd.

Supplies (e.g. packaging and lifestyle materials) and Electronics (e.g. display components and electronic devices).

Focusing on these three business streams, DNP has been actively expanding globally and now with 26 sales locations and 13 manufacturing plants around the world, DNP's Overseas Business Headquarters has the foundations to support global business development. Tomoyasu Nagata, Section Head of the Overseas System Section at DNP says, "Recently, DNP has become more active in pursuing overseas business expansion. Exporting is the main function of our Headquarters' subsystem, and it is a very positive step to now have a system that can export all our company's products efficiently."

The processing required for DNP exports is done primarily through the central overseas business system. The previous system had been constructed based on HP-UX, although it had limitations in terms of expandability. For this reason DNP elected to replace the system and also took the opportunity to revolutionize the overall platform, knowing this would help them expand the global business.

<Examples of products used in various fields>
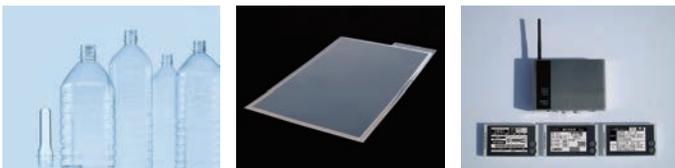
PET plastic bottles   Touch panel sensors   Electronic paper display systems

Key Installation Points

High praise for the high performance, high reliability, and one-stop support of Fujitsu M10

Kazuo Kurosawa
Department Head of
the Third Work System
Department
Work System Headquarters
DNP Information Systems
Co., Ltd.

DNP's central overseas business system issues forms for export customs clearance, billing overseas customers, and placing orders with overseas partner companies. DNP needed a high performance system that could handle increases in the amount of overseas business job data and additional users. During selection DNP carefully considered cost reductions, expandability to add new functions, and a unified support desk that could increase the speed of issue resolution. It was also essential that the system provided stable operations 24 hours a day, 365 days a year.

DNP evaluated multiple vendors and in regard to the Fujitsu M10 UNIX server, Mr. Nagata explains, "We had been paying close
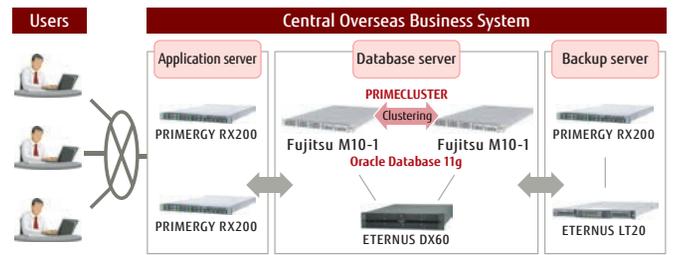
attention to information about new, high-performance servers, and its high-performance, based on supercomputer technology, was a step above conventional servers. We confirmed the figures backing Fujitsu M10 and it quickly became a very suitable candidate."

The final selection was done by DNP Information Systems Co., Ltd., who manages information systems for the DNP Group. Mr. Kazuo Kurosawa, Department Head at DNP Information Systems, stated, "Our role is to provide a stable service for information systems, from planning and design to construction, operation, and maintenance. When we investigated Fujitsu M10, the key points considered were not just its high performance, but its operational stability inherited from mainframe reliability, the fact that it embraces the future potential and long-term support of Oracle Solaris, and its compatibility with Oracle Database. Specifically when combined with Oracle Database 11g, Fujitsu M10-1 is able to deliver one-stop-shop support for our business and significantly reduce maintenance costs. We chose Fujitsu M10 for its ability to deliver a comprehensive solution."

Installation Process and System Overview

Installation testing using Fujitsu's Trusted Cloud Square to reduce construction time

The decision to select Fujitsu M10 was made in February 2013 and the deadline for the implementation was June the same year. As a result system construction needed to be finalized within the strict four month schedule. Leveraging Fujitsu's Trusted Cloud Square facilities, installation testing for Fujitsu M10 was expedited and ensured the deadline could be easily met. Inadvertently the testing also verified first hand to DNP Fujitsu M10's extreme performance capability.

Shohei Yamashita
Third Work System
Department
Work System Headquarters
DNP Information Systems
Co., Ltd.

Mr. Shohei Yamashita of DNP Information Systems reflects back on the installation "The central overseas business system links various jobs and data from every department, so a ton of testing needed to be done. We had planned some time for testing, but with the great testing facilities and Fujitsu M10's high processing capability, we were able to finish a lot quicker than expected. Fujitsu M10 and Fujitsu made sure system construction could be completed in a short amount of time."

The migration from HP-UX to Oracle Solaris also went smoothly due

to Fujitsu's extensive migration know-how. And thanks to the close collaboration between Fujitsu and DNP Information Systems, the system was operational by the date scheduled.

As for the new system configuration, Fujitsu M10-1 was used as the core database server, and PRIMECLUSTER, Fujitsu's highly-reliable platform software, was used to achieve high availability through a cluster configuration. The database server works in conjunction with the application server and the backup server. Furthermore, support desks were unified using SupportDesk, a comprehensive maintenance and operational service for both hardware and software provided by Fujitsu's expert technicians. This one-stop-shop support delivers a quicker resolution in the event of any issues.

Result of Installation and Future Prospects

Doubled response performance, tripled batch processing speeds, and reduced operating costs by nearly 35%

Despite the fact that several large changes were made in a short period of time including; implementing a new server, migrating from the old HP-UX system, and updating software, there has been no major incident since production started, and the system continues to operate stably.

After installation, the database's response performance doubled. Users who use applications on the central overseas business system have praised the high-speed response, saying, "It's noticeably much faster."

Regarding batch processing, the database links with systems in other departments to process data, conventionally these large amounts of data required a lot of time to complete. However, batch processing performance has since tripled, thus greatly reducing overall processing time. This has also resulted in total operational costs

being cut by nearly 35% with software maintenance costs kept down and operational efficiency increased by installing a backup server.

Regarding future prospects, Mr. Nagata says, "We're planning to add more functionality leveraging the CPU Core Activation which will allow us to flexibly expand the system as needed. With this function we can scale up when our business is ready while keeping initial costs down. Some of our future initiatives include strengthening links with partner companies and making job processing more efficient. We look forward to working with Fujitsu as they continue to support us with leading-edge solutions like Fujitsu M10 technology for big data processing."

Message from the Sales Representative

Takahiro Makino
Printing Industry Sales Department
Process Industry Sales Division
Manufacturing Industry Business Unit
Fujitsu Limited

By implementing Fujitsu M10, DNP has greatly reduced costs and increased response times compared to the previous system. At first, there was some concern as some applications from the other OS needed to be modified before migration. However, in the end, a major reason we were able to perform the implementation is their high awareness regarding system replacement, their deep understanding regarding our suggestions, and their precise decision making. I'm very grateful. In the future, Fujitsu plans to continue to support DNP's overseas business with our full breadth of capabilities and technology.
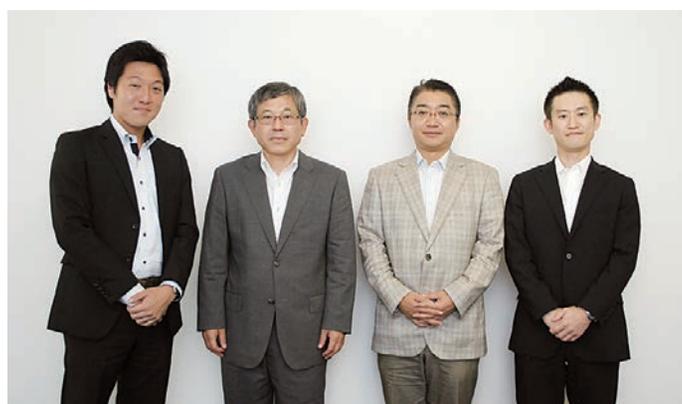
Term explanation
1) Aseptic filling system: System that takes the bottle from the mold, fills it aseptically, caps it, then wraps it

(From the left) Takahiro Makino from Fujitsu, Mr. Kazuo Kurosawa, Mr. Tomoyasu Nagata, Mr. Shohei Yamashita

Corporate Profile

Dai Nippon Printing Co., Ltd.

Head Office	1-1-1 Ichigaya Kagacho, Shinjuku-ku, Tokyo 162-8001
President	Yoshitoshi Kitajima
Established	October 9, 1876
Capital	¥114,464,000,000 (as of the end of March 31, 2013)
No. of employees	39,445 (Consolidated), 10,724 (Non-consolidate) (as of the end of March 31, 2013)
Business details	Information Communication Section (Books, electronic publishing, catalogs, various cards, etc.), Lifestyle and Industrial Supplies Section (Packaging, residential interior and exterior material, digital photo printing, solar battery parts, etc.), and Electronics Section (LCD color filters, photomasks for semiconductors, etc.)
Website	http://www.dnp.co.jp/eng/

DNP

March, 2014