Hewlett Packard Enterprise

KUMHO PETROCHEMICAL

Objective
Improve ERP system performance with a new platform

Approach
Researched the market and reviewed server and storage solutions from three leading vendors

IT Matters
- Accelerated system performance by 60 percent
- Reduced implementation time from 200 to 100 hours
- Lowered data center operating and system maintenance costs

Business Matters
- Increases staff productivity with improved ERP response times
- Enables end of month accounting to be completed in the requisite three days
- Reduces the time that system managers have to work
- Delivers greater efficiency to support the company's business aims

Kumho Petrochemical reduces costs and improves system stability

HPE servers and storage support SAP ERP upgrade for synthetic rubber manufacturer

Business growth and the explosive increase in data volumes had reduced the performance of Kumho Petrochemical's vital SAP ERP system. Rather than upgrading its old systems, the South Korean company decided to implement a new SAP platform. It chose an HPE Superdome 2 server with HPE 3PAR StoreServ all-flash array (AFA).

Challenge

Reaching the limits
Founded in 1970 and headquartered in Seoul, South Korea, Kumho Petrochemical has the largest synthetic rubber manufacturing capacity in the world. It operates in several fields, including synthetic resins, speciality chemicals, electronic materials, nanocarbon, energy, and building materials. To compete in multinational markets, Kumho Petrochemical aims to use the most efficient technology. Accordingly, it was a major challenge when its vital SAP ERP system suffered performance issues.

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"Because the HPE Superdome is a high-end product, it is extremely stable. The HPE 3PAR StoreServ quad controller delivers excellent performance, while allowing the array to continue operating even if two controllers stop functioning."

— Cho Yong Ju, deputy head of IT Planning Department, Kumho Petrochemical

Kumho Petrochemical had implemented SAP in 2007. This initially improved performance but, as business grew and data volumes increased, processing speeds dropped. Five years after adopting the system, the dialog response time was exceeding SAP's recommended 1,000 millisecond. The continued performance deterioration was a concern for Kumho Petrochemical.

Kumho Petrochemical tried using Advanced Business Application Programming (ABAP) tuning and other server tuning techniques. However, there was a limit to the improvements these offered. Monthly accounting became a significant hurdle with slow response times meaning staff had to work into the night. The companywide ERP system included servers, storage and backup equipment from the same manufacturer, but it still suffered from compatibility issues.

As performance and stability continued to drop, employee complaints started to mount and data center operations became increasingly expensive. The company began the search for a replacement system.

Solution

Replacement better than upgrade
Kumho Petrochemical realized that replacing the existing system would only provide a minimal improvement in speed. Total Cost of Ownership (TCO) comparisons revealed that, over five years, it would be cheaper to buy new equipment.

Cho Yong Ju, deputy head of Kumho Petrochemical's IT Planning Department explains: "When you're replacing a system after a long time, it provides you with the opportunity to make a significant difference. We were waiting for such an opportunity.

"However, when we originally looked at the HPE Superdome and other servers, it didn't look like we would get enormous improvements. The storage products we'd used were high-end so other disk-based cached memory platforms didn't really provide the improvements or better performance with similar disk-based storage products.

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"In 2012, Solid State Disk (SSD) storage had just come onto the market and there were only a few products available. We realized that flash storage was much faster than disk-based storage but flash-based memory was much more expensive."

Kumho Petrochemical decided to replace its ERP hardware using a single provider for servers and storage. Conducting a six-month Proof of Concept (PoC), it brought in servers and flash storage, copying its entire operating system to check the transfer time. This allowed an actual test of the system's processing power. Each module was tested by managers using transaction scenarios to compare PoC against the existing equipment.

It also reviewed flash, disk, and hybrid storage formats. It considered using flash storage for the operating database and disk storage for development and QA resource, but HPE Korea suggested an all-flash storage system.

With improved TCO and efficiency in mind, the company installed 20 HPE Superdome servers and one HPE 3PAR StoreServ 7450 all-flash array (AFA). It also upgraded its SAP kernel and Oracle database software.

"Because of the high price of flash storage, we were only going to use it for the underlying Oracle database and leave the rest on disk storage but HPE made it possible for us to go all flash," explains Cho Yong Ju.

Flash storage must be replaced at the end of its writing life. Kumho Petrochemical saw this as a problem because it would have to consider the cost of replacing the storage when its writing life ended. When it calculated all the maintenance costs and made the purchase, the company mentioned this concern and HPE Korea agreed to replace the flash storage within five years.

Benefit

Improved performance

Kumho Petrochemical chose HPE because it would deliver the best TCO, performance, stability, and technical support.
Deputy department head Cho Yong Ju explains: "Because the HPE Superdome is a high-end product, it is extremely stable. The HPE StoreServ quad controller delivers excellent performance, while allowing the array to continue operating even if two controllers stop functioning."

Customer at a glance

Application
SAP ERP
Oracle

Hardware
- HPE Integrity Superdome 2
- HPE 3PAR StoreServ 7450 all-flash array

HPE services
- HPE Technology Services consulting

"By changing to flash storage, we're able to get much better performance than with disk storage. The improvement in speed was truly surprising."

— Cho Yong Ju, deputy head of IT Planning Department, Kumho Petrochemical

The company exchanged its HPE Superdome 1 models for 20 Superdome 3s and replaced another vendor's storage unit with the HPE 3PAR 7450. Upgrading its servers from an HPE product to a new HPE product meant a smooth migration.

"While HPE to HPE migration might take 100 hours, migrating from HPE to another company would have taken 150 to 200 hours," says Cho Yong Ju.

Originally the company had planned a three month migration but by sticking with HPE it reduced this to two months, resulting in lowered maintenance and data center operating costs.

"Users are very happy with the increased performance," says Cho Yong Ju.

Managers now have more time to complete monthly accounting, which is meant to be done three days after the month end. Especially when it comes to the CO module, performance has improved by as much as 60 percent."

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