

### 64 bit migration and consolidation of SAP mission critical system on Windows

#### Solution

- 64 bit SAP system environment

#### Industry

- Manufacturing

#### Products

- PRIMEQUEST 440/480

### Overview

Konica Minolta was operating mission-critical systems for their logistics and data warehouse systems using SAP application in a 32 bit Windows environment. They took the decision to introduce PRIMEQUEST, with its mainframe class reliability, 64 bit Windows environment, advanced dual synchronous system architecture and Intel Itanium 2 processors, on the termination of previous software and peripheral item support. The new system started operation in July, 2006 achieving 2-5 times better performance compared to the legacy system.

### Konica Minolta

Konica Minolta group is an innovative company that continues to push the boundaries in the field of imaging. Founded by the merger of two famous Japanese imaging and camera companies Konica and Minolta, they needed to thoroughly overhaul the configuration of their IT environment. Konica Minolta Holdings, the consolidated holding company (Pic.1), operated their logistics operations (including production, logistics and purchasing management) plus their mission critical data warehouse using SAP applications in a 32 bit Windows environment. 5 years had passed since their original SAP servers were introduced. There were many problems with the existed operation and they were considering system replacement.

Mr.Noma, Manager, Data Center Technical Operations, Konica Minolta Information System Co., Ltd. (Pic.3) says "The biggest problem was the termination of support for the job operation management software, backup software and peripheral products in 2007. Also, we could only shutdown the system for a limited time on Sundays and were not allowed to extend that shutdown time. This made it almost impossible to upgrade the legacy system software. For these reasons, we decided to replace the system so that we could expect benefits in both operation and performance."

Mr.Okubo, General Manager, Information Technology Planning Division, Konica Minolta Holdings, Inc. (Pic.2) says "The holding company has to maximize the value of the group companies and one of their important missions is to create



**Pic.1** New systems introduced to Konica Minolta worldwide. Konica Minolta Business Technologies, China (Left), Konica Minolta Business Solutions, Germany.

common functions within each group. IT is one of the major foundations that support this strategy."

"Today Konica Minolta has many sites around world and operational constraints are becoming more severe. If there is a delay in overnight operation, shutdown time will be shortened. Also, if there is a delay in maintenance operations, it can cause crucial consequences for group operations. Actually, it was impossible to reconfigure the database table."

Batch operation response was also declining since the database size tripled compared to when the legacy system was introduced. Although datacenter consolidation from the time of the merger was completed, operational efficiency was declining since they were using two operational management software systems simultaneously. They decided to consolidate these at the same time as platform replacement.

### Only Fujitsu proposed 64 bit

Konica Minolta started their platform replacement planning in Fall, 2005. The biggest point in server selection was whether to continue using the 32 bit environment or replace it with 64 bit.

"Our SAP R/3 system was available using the 32 bit compatible mode of IA64 (64 bit Itanium) Windows, x64(64 bit Xeon EM64T) Windows and x86(32 bit Xeon) Windows. All vendors except Fujitsu proposed a 32 bit environment. However, we couldn't expect the benefits of large scale memory with the 32 bit environment due to the limitations in virtual address space. Since more than 50% of SAP BW (Konica Minolta's SAP R/3 and data warehouse) operation was mostly data base operation, we were eager to use the 64 bit OS which enables us to use an almost infinite virtual

**FUJITSU**

THE POSSIBILITIES ARE INFINITE



**Pic.2 Mr.Okubo,  
General Manager,  
Konica Minolta  
Holdings, Inc.**

address space. For this reason, we decided to select Fujitsu's PRIMEQUEST, the only proposal with a 64 bit environment."

However, it wasn't an easy decision to introduce an Itanium server and 64 bit Windows. Mr. Noma says, "Although a few years have passed since the release of Itanium 64 bit Windows, we were anxious since this was our first introduction and it was expected to be used for a mission critical system. We were anxious about whether all programs including

the peripheral software offered by the third party would operate properly."

Although they had software which didn't support Itanium 64bit Windows, they won the software support as a result of negotiation. Beside, they continued to verify whether their self developed C programs and Windows batch programs worked on Itanium 64bit Windows. As a result, they concluded that all software was available on Itanium and finally decided to introduce PRIMEQUEST.

The new 64bit system environment include PRIMEQUEST 480 with 30 Itanium 2 CPU and PRIMEQUEST 440 with 12 Itanium 2 CPU. Each server has 5 partitions and 3 partitions, respectively (Diagram 1). Windows Server 2003 was introduced as the OS and SQL Server 2000 was introduced for the secured database. Konica Minolta is planning to upgrade SQL Server from 2000 to 2005 as a next step. SAP R/3 and SAP BW is used for applications and the main modules of sales management (SD), inventory/procurement management (MM) and production management (PP).

### Support and duplication technology were key

Konica Minolta put emphasis on availability, performance, scalability and OS in their server decision.

Mr. Noma says, "The advantage of PRIMEQUEST is that it can duplicate every component except the CPU and is a highly reliable system applicable to non-stop operation. In fact, there was a memory error on the day before the migration, but thanks to PRIMEQUEST, a system down didn't occur.

Quality of server assurance provided to group companies is crucial for Konica Minolta. For this reason, they decided to introduce a floating system board which includes memory and CPU in the PRIMEQUEST 480. The system will automatically change to the floating system board in case of CPU or system board failure. This enables prompt operation resumption without introducing clustering.

"We tested the function of the floating system board using a testing tool offered by Fujitsu. Our target for system recovery was 1 hour and this function enabled recovery in just a few minutes after OS reboot." (Mr. Noma)

Mr. Okubo also says, "In addition to these functions, most components except the CPU are Japanese products developed by Fujitsu. We are confident about one-stop support for both hardware and software including OS and SAP application. We think PRIMEQUEST is optimum as an integrated platform since it is applicable to both scale up (Improved database server performance by adding CPU) and scale out (Adding new applications by partitioning)."

### Achieved 2-5 times performance improvement

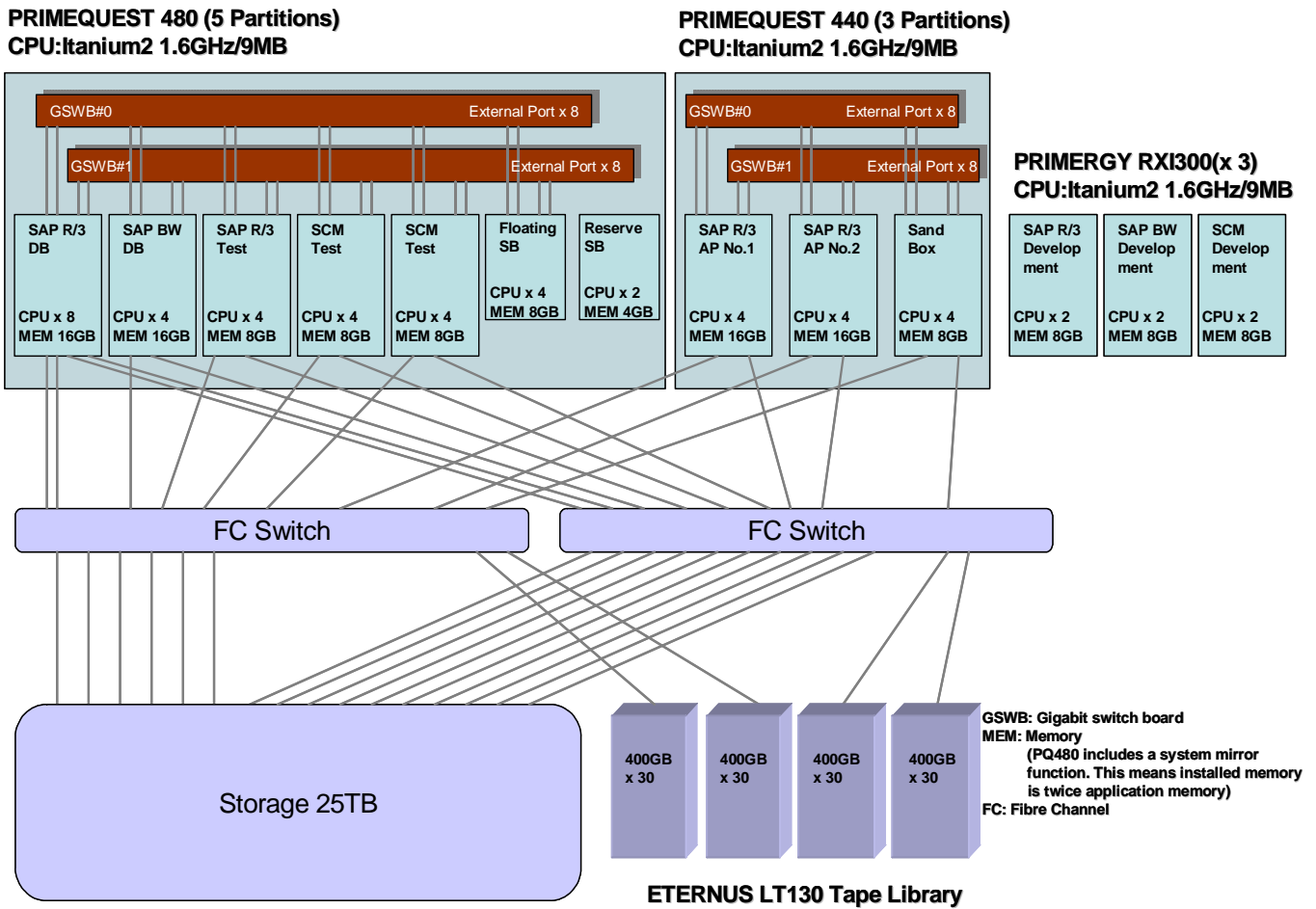
The new system started operation on July 26 2006. It has 2-5 times higher performance compared to the legacy system. "There was a 2-3 times improvement in response speed in online transactions. There was also a significant improvement in batch response with the response speed from staging to data input in SAP BW (Data Warehouse) improving 5 to 10 times. (Mr. Noma)

Mr. Okubo emphasizes that "Migration to the new system had a big effect on operation management. We no longer have job delays and now have margin in the job schedule. If we upgrade SQL Server from 2000 to 2005, we could reconfigure the database without shutting down the system. In addition, we could configure a non-stop system by using the highly reliable architecture. This is a great advantage for the world wide operations of Konica Minolta." (Mr. Okubo)

"Although we have a CPU resource margin, we are now planning a server upgrade to PRIMEQUEST 500 which uses dual core Itanium 2. Also, the XPAR function of PRIMEQUEST 500 enables system consolidation by having multiple OS in one system board. (Mr. Noma) Mr. Noma says, "As a system integrator, we would like to expand our service business to SAP application migration from 32bit Windows environments to 64bit environments, using the technology and knowledge accumulated in our system configuration this time."



**Pic.3 Mr.Noma,  
Manager,  
Konica Minolta  
Information Systems  
Co., Ltd.**



**Diagram.1 Konica Minolta SAP mission critical system diagram**

PRIMEQUEST 480 with 30 Itanium 2 CPUs and 5 Partitions. PRIMEQUEST 440 with 12 Itanium 2 CPU and 3 Partitions. Operating System: Windows Server 2003. Database SQL Server 2000. Applications: SAP R/3 and SAP BW. Major SAP R/3 modules include sales management(SD), inventory/procurement management (MM), production management (PP). The PRIMEQUEST 480 system board designated as "floating" is for system board swap on failure; the "reserve" system board is for system expansion. The "sandbox" in PRIMEQUEST 440 is available for multiple uses.