Introducing Linux for next generation mission critical system
Flexibility, scalability and robustness are key

Solution	• Server Consolidation
Industry	• Financial institution
Products	• PRIMEQUEST 580

Overview

Shiga bank is planning to replace their existing mission critical systems before Jan. 2008. Their Information system, which is one component of their entire system, is configured using a mainframe and UNIX server. Shiga bank is now planning to configure an open platform environment by introducing a Fujitsu PRIMEQUEST Intel Itanium 2 mission critical IA server running Linux. Cost performance was key in addition to flexibility, scalability and robustness. Today, it is becoming more common to introduce open platforms as mission critical systems. With their largest consideration being stable operation, financial institutions have started introducing such open platforms.

Shiga Bank

Shiga bank is one of the largest regional banks in Japan. Headquartered in Otsu city, they also have 134 offices around the Kansai region (Pic.1). Compared to other regional banks, Shiga bank has an advanced IT environment comparable with major commercial banks.

The recent privatization of the postal banking system and new approaches to retail banking by the commercial banks is rapidly changing the environment for regional banks. Many regional banks outsource their operations to reduce costs.

In this environment, Shiga bank is now planning to replace their systems. Their concept for reconfiguration of the Information system is to replicate accounting data and to utilize a database that can more easily extract and process the data.

System selection from scratch

Shiga Bank's next mission critical system target is to be able to flexibly and promptly provide strategic proposals and introduce new services.

They now operate different storage environments,for mainframe and UNIX servers and will consolidate them to the latest ETERNUS 8000 series. This
will enable the optimization of resources, improvement in operational quality, high reliability and scalability.

Pic.1 : Headquarters of Shiga Bank in Otsu city, Shiga prefecture.

"The President offered three items of advice. Have multiple points of observation to better evaluate vendors without bias. Take a a dynamic view in catching with technology innovation and take the view point of educating people for long term planning. For these reasons, we decided to introduce an open system." (Mr.Fujii, Director, Systems Dept. (Pic.2) .

Mission critical systems of financial institutions not only require high reliability and availability, but also have to meet high level requirements of security and compliance. System change flexibility is also required due to changes in regulation. Under this severe environment, Shiga Bank replaced their online transaction accounting system onto Fujitsu's latest GS21 500 mainframe. They also reconfigured their information system on Linux by introducing PRIMEQUEST 580 to replace their mainframe and UNIX Information system, deciding to configure an open environment using Linux and Oracle. For this reason, a PRIMEQUEST 440 was introduced in Jan. 2006 for development. They are planning to introduce PRIMEQUEST 580 (2 units) in Jan. 2007 for live operation.

"We thought migration of our existing accounting system was the best choice both for cost performance and security reasons, because it is very stable. We also thought that this plan would retain multiple choices for future planning. In regard of the Information system, we decided to use DBM (Data Base Marketing) which is configured by Oracle on UNIX. We decided to introduce Oracle and UNIX, a de facto standard, as it has the advantage of operation across various products enabling secured maintenance of the IT asset."

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Same reliability as mainframe

Solving problems in the existing system, configured using UNIX, was one of the biggest reasons for introducing an open environment based on Linux. "Although it is configured in an open environment, UNIX had problems in migration since it includes several products." Also, since our operational system and standby system are operated using different system environments, there was system degradation during troubleshooting. In addition, we weren't able to flexibly add new functions. (Mr.Iwasaki, Deputy Director, Systems Dept.(Pic.3)

Pic.2 : Mr.Fujii, Director, Systems Dept.

Open environments such as Linux enable the introduction of highly available and scalable platforms at each stage and make it easier to solve the problems of performance degradation.

Shiga Bank focused on the IA server to clear these issues. Mr.Fujii explains the reason why Shiga Bank decided to choose PRIMEQUEST from the products on offer from the different vendors as follows. "The memory mirroring function, floating system board for CPU failure, scalability up to 64 core, operation optimized by a service processor and middleware were all key points in deciding on PRIMEQUEST."

Shiga Bank also expects that Fujitsu will offer know-how accumulated from other client's business, before starting the operation.

Pic.3 Mr.Iwasaki, Deputy Director, Systems Dept.

Typically mainframes are expected to operate for ten years, and IA servers to operate for five. Shiga Bank decided that PRIMEQUEST enabled them to scale up the system for ten years. "We thought that the new system will be the basis of our scalable database for ten years."(Mr.Fujii)

When considering such long term operation, OS, database and middleware become crucial, in addition to hardware performance and scalability. Mr.Fujii says, "We are not sure whether we will migrate the accounting system from the mainframe to a Linux server. But I assume most of the surrounding mission critical systems will be replaced by Linux. When we considered the introduction of the new platform, there were many ideas from the different departments. After considering the market environment, technology trends and future environment, we finally concluded that Linux is the best choice."

Configured for flexible information analysis

With the financial industry business environment rapidly changing, it is essential for companies to configure an IT infrastructure which can adapt. It is also important to have a structure which enables stable operation over the long term. With such an IT base, they can develop a strong management strategy and maintain their competitiveness.

Pic.4 Mr.Yomori, Systems development group

"Outsourcing was one of the options but we thought we couldn't make that decision at this point. We decided to defer that decision so as not to preclude other options in the future. Having our own system enables us to make our own unique management strategy and to start positive management in a changing environment." (Mr.Fujii)

The Information systems department has non-finite operations in data extraction and batch transaction processing of mission critical data from the front-end systems. This is used for management analysis. Using the ETL tool, they can input information from the front-end operation into the data warehouse. In addition, ETL enables effective development of BI (Business Intelligence) transactions and OLAP (On-Line Analytical Processing).

"Management strategy will be changed along with the changes in the business environment. It will become more important to provide precise information. Since development using ETL is not programming, flexible and cross-cutting information analysis will become possible. Obtaining this flexibility is one of our purposes in system replacement." (Mr.Iwasaki)

Pic.5 Mr.Teramoto, Systems development group

By the combination of PRIMEQUEST and Powercenter, data input response will be improved and accounting system data will be reflected in the Information system immediately. By using OLAP and BI, the information system department will be able to shift resources to management strategy such as operation analysis. It will also be possible for them to improve the quality of management analysis.

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Great improvements in operation

In the new system, Shiga Bank will introduce an ETERNUS 8000 storage system for both the accounting and information systems. (Diagram.1) The Advanced copy function will significantly shorten system down time and operation improvements can be expected. Also, security improvements and resource optimization will be achieved by consolidation of currently distributed storage. In addition, unified monitoring of servers, storage and network will be enabled by the introduction of the monitoring software "Systemwalker". As a result, reductions in operation costs will be realized.

"We were already using Systemwalker and more enhanced functions such as failure identification and performance information will be available following the replacement. We are also planning to start document management for trouble shooting records management using the help desk function."(Mr.Yomori, Systems development group, (Pic.4)

After the replacement, more systems in Shiga Bank are expected to be covered by Systemwalker. They are also planning to consolidate the database of the mission critical mail server and the OLAP server, which extracts and processes data from the information DBM, to optimize application development.

"General affairs systems such as financial approval document workflow and travel cost reimbursement are now operated on multiple UNIX and Windows servers. These servers will not be replaced this time but we will consolidate the databases of PRIMEQUEST in introducing Linux."(Mr.Teramoto, Systems development, (Pic.5)

As a result of their system replacement plans, it is certain that the IT strategy of Shiga Bank will become even more sophisticated and cost/effective in the future.
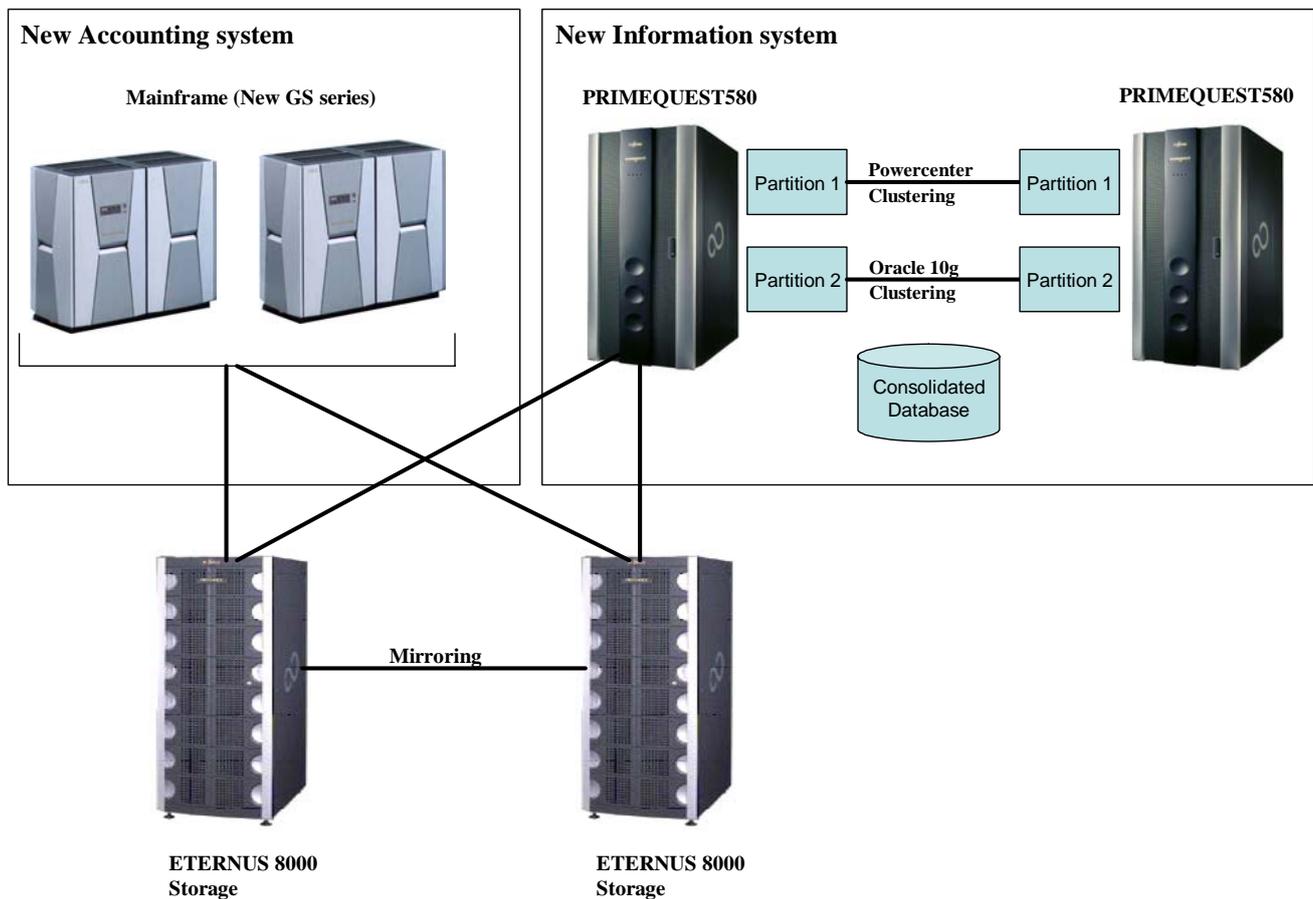

Diagram 1. Overview of Shiga Bank's next mission critical system
Accounting systems, including online transaction processing will be migrated to latest GS21 500 mainframe. The Information system which is currently configured using the mainframe and UNIX will be replaced by an Oracle and Linux environment on a PRIMEQUEST 580. The PRIMEQUEST has two partitions. One is the batch/ODS (Operational Data Store) and the other is the online DB. Shiga Bank will configure a highly available system to the same level as the Accounting system by introducing "Oracle RAC 10g" in the DB partition and by using PRIMECLUSTER clustering software across two PRIMEQUEST servers.

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