

Hitachi Storage Solutions at Work

Gmarket

Industry

Retail: Online Commerce

Solutions—Business Continuity

Hardware: Hitachi TagmaStore®
Universal Storage Platform, model USP1100

Software: Hitachi TrueCopy™ Heterogeneous
Remote Replication software bundle
Hitachi Resource Manager™ utility package
Hitachi Universal Replicator software
Hitachi HiCommand® Tuning Manager software

“The three data center disaster recovery solution [from Hitachi Data Systems] is designed to meet global standards and to support content and services so that we can continue to compete effectively in the global Internet shopping mall market.”

—Mok Ju-young
Technology Team Manager
Gmarket

GMARKET



Gmarket Boosts Online Commerce Traffic with Multisite Disaster Recovery Solution

When Gmarket, a burgeoning Internet retail company, began experiencing errors and interruptions in its database systems, it sought out a premier business continuity plan. An Application Optimized Storage™ solution from Hitachi Data Systems, based on the Hitachi TagmaStore® Universal Storage Platform, became the framework for a three data center disaster recovery architecture. Gmarket now has a resilient, high-performance platform to support its exponential growth.

While not quite supplanting the drive to local shopping centers, the e-commerce marketplace has created a paradigm shift in how goods are purchased and sold. Gmarket Inc., a Korea-based online retail destination, has become the first online shopping mall to achieve US\$1 billion in sales within a half-year period. With more than 9.3 million registered users and nearly 2 million products currently available, Gmarket has become the most visited e-commerce Web site.

Gmarket attributes this rapid growth to its ability to facilitate quick, secure, and convenient transactions between buyers and sellers of an ever-growing inventory of products. The company pioneered the open market business model, in which supply and demand come together in a single place and participants engage in instant fixed-price or negotiable deals, rather than having to wait for auction bids to close.

Supporting Transactional Momentum

While Gmarket had invested generously in the deployment of IT infrastructure and system installations several years ago to support its future growth, no one could accurately anticipate the ubiquity of the online shopping phenomenon. Despite continued efforts to expand infrastructure and maintain stability,

Gmarket's exponential growth rate always exceeded hardware reinforcements.

Performance was an issue in the company's existing database infrastructure, with chronic errors and interruptions occurring in the transfer of data between servers and complicating back-end processes. Also, slow response times or power outages could have devastating results for the online marketplace, such as transaction interruptions and loss of data or revenue. The database architecture needed a checkup, but this was risky and time consuming. Replacing the entire architecture to resolve chronic system problems also carried a good deal of risk. Still, preventing disruption of operations was vital to Gmarket's continued success.

"Today, the company is challenged to maintain a stable IT environment in order to power high-volume transactions in real time," says Mok Ju-young, technology team manager at Gmarket. "We desperately needed a highly available, performance-based infrastructure appropriate for the business load."

To be able to reliably support the accelerated growth and protection of transactional data volumes, Gmarket selected an Application Optimized Storage™ solution from Hitachi Data Systems, based on the Hitachi TagmaStore® Universal Storage Platform.

Designing Business Continuity

Mok determined that, in particular, Gmarket would need to restructure its disaster recovery configuration in order to reduce costly errors, maintain system stability, and support expanding operations. The existing environment included midrange and enterprise servers, as well as external storage solutions, housed at the main center at Non Hyun Dong KODC and the backup center at Seo Cho Dong KIDC.

The first order of business for the new Gmarket solution was putting together a team. Mok worked in partnership with Hitachi Data Systems–Korea and Hyosung Information Systems (HIS) to design a multicenter approach for managing disaster recovery.

The plan was to design a "three data center" configuration and deploy a core technology of one source, two targets. Unlike a two data center disaster recovery system, which provides backup from a primary site to the secondary site, the unique Gmarket model would support highly stable, continuous backup of the same data from both sites. This ensures availability and integrity of critical information.

"While there are many examples for how to construct a two data center solution, this was the nation's first design for a three data center solution, and many companies were focused on our outcome," says Mok.

Optimizing Data Replication

To begin the transformation to the three data center model, Gmarket performed a system upgrade and then installed the Universal Storage Platform model USP1100. Designed for cutting-edge virtualization and universal replication, the model USP1100 is a highly resilient platform that can navigate across heterogeneous storage systems with scalability up to 32PB per platform and performance levels of up to 2.5 million IOPS. Hitachi Resource Manager™ utility package uses tightly integrated software features and intuitive administrative commands to optimize the performance of the USP1100. In addition, through the capacity and

performance reporting functions of Hitachi HiCommand® Tuning Manager software, the company achieved efficient storage management with capabilities to elevate availability and secure marginal capacity.

With the Hitachi TrueCopy™ Heterogeneous Remote Replication software bundle, the USP1100 provides an innovative and elegant approach to business continuity with both synchronous and asynchronous remote replication. For Gmarket, that translates to no interruption of mission-critical services, even during an outage.

Hitachi Universal Replicator software efficiently unifies the three data center solution with advanced capabilities, such as disk journaling and asynchronous replication driven by the remote site.

Growing Global Benefits

The company is now positioned to continue large-scale growth with confidence that its IT infrastructure will deliver durable, uninterrupted service. Because Gmarket now employs the elite replication and performance of the USP1100, complications no longer follow back-end work processes such as data transfer and backup.

“I was impressed with not only the performance of the Hitachi storage but also the support provided for the management, operation, and maintenance of the solution,” says Mok.

With the help of Hitachi Data Systems, Gmarket has built the ultimate disaster recovery model in Korea, based on the resiliency of the Universal Storage Platform. The Gmarket shopping cart



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Rather than using cache memory, the solution employs time-stamped disk journals of replication data to minimize effort by the primary production site. And data can be copied between any supported systems, regardless of operating system or protocol differences, allowing maximum flexibility for data distribution and failover options.

To ensure availability of current data copies in each Gmarket disaster recovery site, Universal Replicator software partners with the synchronous functionality of the TrueCopy software bundle for continuously available online copies. This software combination helps Hitachi Data Systems to deliver “no data loss” replication across any distance, while guaranteeing data integrity.

is piled high with benefits to support its growing e-commerce success: storage virtualization, universal replication, and even a 30 percent savings in cabling costs.

“When it comes to running an Internet shopping mall, the value of a database cannot be stressed enough,” says Mok. “The Application Optimized Storage solution from Hitachi Data Systems increased the practical value of our database, providing the opportunity to access existing data—which was once nearly impossible to use—in a safe and broad manner.”

About Gmarket

Gmarket Inc. is a leading retail e-commerce marketplace in Korea, offering buyers a wide selection of products at competitive prices and sellers a comprehensive and flexible sales solution. The highly scalable e-commerce marketplace facilitates small or large quantity product sales in a convenient, cost-effective, and secure manner. Gmarket’s e-commerce marketplace is located at www.gmarket.co.kr.

About Hyosung Information Systems

Hyosung Information Systems Co. Ltd., a joint venture of Hitachi Data Systems in the United States and the Hyosung Group, currently markets/supports storage hardware, software, solutions, and services from Hitachi Data Systems. The company is expanding to include consulting, comprehensive services and support, software, and other midrange products to become a total storage solution provider. For more information, visit www.his21.co.kr/.

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