



RAKUTEN

STORAGE AREA NETWORK

Online Services Provider Improves Data Center Availability and Reliability with Brocade

EXECUTIVE SUMMARY

Technology Challenge

Improve management efficiency and systems resiliency for higher services availability and reliability, while maintaining high performance

Solution

Brocade 825 (dual-port) 8 Gbps Fibre Channel to PCIe Host Bus Adapters (HBAs)

Benefits

- Increased visibility into operations, enabling faster failure detection and recovery time
- Improved systems availability by eliminating the need to replace HBAs if Small Form-Factor Pluggables (SFPs) fail

Rakuten is the largest Internet services company in Japan, operating the country's first Internet mall and many other online services—including auctions, travel sites, blogs, and financial services. Rakuten Ichiba (Rakuten Market), the core of the company's business, has been growing since its introduction in 1997. Today, more than 30,000 shops are affiliated with Rakuten Ichiba, with more than 42 million items traded online, making it Japan's biggest Internet shopping mall.

Rakuten continues to aggressively expand its business to meet the online needs of its customers. The company's services are fully integrated to provide a convenient "one-stop shopping" service to its customers, and its IT infrastructure plays a crucial role in supporting these core services.

SEEKING FIBRE CHANNEL HBA ALTERNATIVES FOR NEW SERVERS

Rakuten's database system, which supports the company's services, runs on open platforms consisting of UltraSPARC/SPARC64 UNIX servers and EMC high-end storage devices,

with Brocade® SAN directors and switches. Some of Rakuten's database servers were due to reach the end of their hardware support contracts in 2010. As a result, Rakuten initiated a project to replace these database servers, and also started looking for Fibre Channel Host Bus Adapter (HBA) alternatives to attach to the new servers.

Rakuten had been leveraging a Fibre Channel-based SAN to run its services and wanted to continue using its existing infrastructure. "The services that we wanted to deploy required Fibre Channel HBAs with a PCI Express interface. Our existing HBAs did not meet this requirement, so we started investigating HBA alternatives," explains Masayuki Kikuchi, Group Manager, Shared Infrastructure Development and Operations Group, Rakuten. "We also wanted to solve some operational problems that we had with the old HBAs and improve management efficiency. Our database system is mission critical to supporting the company's core services, and we needed best-in-class HBAs that were suitable to our system."

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REDUCING RECOVERY TIME

Rakuten narrowed down its HBA options to the latest model from its current HBA vendor and the Brocade HBAs. "We focused on whether the new HBA could provide the same level of functionality and performance as the old HBAs," notes Takeshi Ito, System Engineer, Shared Infrastructure Development and Operations Group, Rakuten. "We also evaluated whether the new HBAs would be able to solve the operational management problems we had with the old system."

The SFP module that Rakuten had been using with its HBA was not hot-swappable. Therefore, even if there was only an SFP module failure, the HBA itself had to be replaced, resulting in longer downtime. In addition, the HBA did not have a log tracking capability. As a result, the IT organization had to spend time identifying the failure and its cause, resulting in longer recovery times. The Brocade HBA, however, could provide greater visibility into the HBA status by collecting access logs, and its hot-swappable SFP could help further reduce downtime.

Impressed with the advantages provided by the Brocade HBA, Rakuten proceeded to evaluate the product in a production environment. "The evaluation testing went quite smoothly with help from the Brocade engineer," says Takeshi Ito. After validating that the Brocade HBAs interoperated with the existing database cluster environment—and after encountering no trouble with failover during connection failures—the company decided to deploy the Brocade 825 HBAs.

IMPROVING RELIABILITY

Currently, two Brocade 825 dual-port HBAs per server are attached to 16 database servers at Rakuten. The company expects this SAN infrastructure upgrade to result in faster recovery times and greater service reliability should the system experience any issues. "With our old HBAs, we would rush to replace HBAs whenever we had a failure, without identifying its cause. With Brocade HBAs, we now can quickly determine the cause of the failure and provide an appropriate response," states Takeshi Ito. "SFP port failure, for example, is now much simpler to manage. We can replace an SFP module online, and it's done. The HBA card itself is not replaced, thus there are no changes made with the worldwide name. We do not need to reboot servers or reconfigure the SAN fabric."

Rakuten plans to replace more than 200 database servers as part of this project. "We have been relying on Brocade SAN solutions for many years, and we are fully satisfied with their quality and reliability. This definitely led us to the decision we made to adopt Brocade HBAs," explains Masayuki Kikuchi. "Integrating Brocade SAN directors and switches and Fibre Channel HBAs has helped reduce issues and improved systems stability. We expect to further improve reliability and operational efficiency by leveraging end-to-end intelligent functionalities and unified management with our Brocade environment."

For more information, visit www.brocade.com.

WHY BROCADE

- Proven reliability and quality
- Easy integration with existing infrastructure
- Higher visibility into HBA status for faster failure detection
- Provided hot-swappable SFPs, further reducing downtime

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