toss bank

About Customer

Toss Bank is the third internet-only bank founded in South Korea and the fastest-growing bank with over 8 million customers in just two years.
www.tossbank.com

Geo

Asia Pacific, Japan

Industry

Financial Services

Solution Area

Accelerate Core Applications
Activate Real-time Analytics

Pure Storage®
Products in Use

FlashArray//C™
FlashArray//X™
Pure1®

Toss Bank Drives Financial Services with FlashArray

As the fastest-growing internet-only bank, ranked #1 in South Korea for Forbes' The World's Best Banks 2023, Toss Bank provides financial services with the latest IT infrastructure. To rapidly retrieve and analyze data on its customers' financial transactions, the bank needed to expand its storage capacity.

Toss Bank introduced Pure Storage FlashArray™ to significantly improve storage performance, scalability, and availability in the data center. The flexible storage environment leverages existing resources, such as servers, while expanding capacity on demand as data grows.

> "Seeing a 6:1 data reduction ratio without compromising performance was a real testament to the technology behind FlashArray."
>
> **DONGHYUN PARK,**
> SYSTEMS ENGINEER,
> INFRASTRUCTURE TEAM,
> TOSS BANK

Improving Performance while Decreasing Effort

Toss Bank wanted to accommodate 1PB of Elasticsearch data nodes without the cost and management load of adding to the existing server-based architecture. Toss Bank chose FlashArray//C for cost-effective, all-flash storage that meets the high write performance requirements of up to 200,000 IOPS.

Impact on Toss Bank

Support strong and sustained financial transaction data growth

Provide customers with reliable financial services available at any time

Decrease data center footprint and power costs, and minimize storage staffing

Challenges

Scale to support over 1PB of data without server expansion

Drive efficiencies to handle 9,000 transaction logs per second

Reduce load on IT team to manage and maintain environment

Results

Reduces storage needs by up to 83% with data deduplication and compression

Shortens data replication time by 99%, from up to 4 hours to less than 1 minute

Prevents performance issues with automated monitoring and alerts from Pure1

Adopting all-flash storage enables Toss Bank to scale storage volumes independent of servers. Pure Storage also improves the overall storage environment with increased write performance and reliability, lower costs, and support for non-disruptive upgrades. By consolidating more workloads onto Pure Storage, Toss Bank can alleviate bottlenecks and increase the availability of its storage by using a network independent of the servers to transfer data.

Driving Down Costs with Data Reduction Technology

With Pure Storage FlashArray, Toss Bank achieved a 6:1 data reduction through always-on inline deduplication, compression, and pattern removal. This reduced storage needs by up to 83%, maximizing cost efficiency and storage usage.

Pure1, Pure's AI-powered full-stack storage management and monitoring software, enables Toss Bank to easily track storage workload, capacity, and performance status. Proactive alerts immediately inform teams about potential challenges such as hardware degradation, software errors, and environmental issues before they can cause service interruptions.

"Seeing a 6:1 data reduction ratio without compromising performance was a real testament to the technology behind FlashArray," said Donghyun Park, Systems Engineer, Infrastructure Team at Toss Bank. "The powerful data reduction makes it 2.5 times more cost-effective than competing products in terms of effective capacity."

Optimizing Massive Transaction Logs

As an online bank, Toss Bank must handle a massive load of 9,000 transactions per second in its transaction history management system. When efficiencies were needed to manage the load, Toss Bank turned to FlashArray//X with its high write throughput and ultra-low latency to reliably process transaction logs, even with traffic spikes.

Migrating to FlashArray//X has replaced 400 solid state drives, saving significant disk purchasing costs estimated at more than $485,000, as well as significant savings in data center footprint and power costs estimated at $122,000 over a five-year period. The network load used for replication has dramatically improved with the built-in SafeMode™ Snapshots reducing replication time from four hours to less than a minute—a 99% savings.

"By adopting Pure Storage FlashArray, we overcame the performance limitations of our existing storage and laid the foundation to provide more reliable financial services," said Park. "With the active support of the Pure Storage sales team, the all-flash products were delivered to our data center in just two weeks, meeting our urgent deployment needs."