kakaopay


CASE STUDY

# Kakao Pay Builds a Sustainable Data Center with Pure Storage

**75%**
**Lower power consumption**

**92%**
**Reduction in rack space use**

**91%**
**Less time spent for data migration**

> “With Pure Storage, we’ve been able to reduce power use by 75% and decrease floor space, laying a solid foundation for sustainable operations.”

**JOO-SEUNG PARK**
**SYSTEM ENGINEER, INFRASTRUCTURE PLATFORM DIVISION, KAKAO PAY**

Kakao Pay’s Infrastructure Platform Division has seen an increased need for expanding storage capacity amid soaring demand for transactions during the pandemic. With the Pure Storage platform, Kakao Pay reduced power consumption and minimized footprint, all while dramatically improving availability and performance.



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## Business Innovation Through Storage Transition

When the demand for contactless payments surged during the COVID-19 pandemic, Kakao Pay, the largest fintech platform in South Korea, needed to expand storage capacity to accommodate growing volumes, support its 2PB database, and ensure service stability. But the powerful environment also needed to minimize power usage and carbon emissions. All-flash storage from Pure Storage offered an answer.

> **"Pure1 provides us with a user-friendly UX/UI that makes it much easier to take proactive measures when system issues arise, helping us improve availability."**
>
> **JOO-SEUNG PARK**
> **SYSTEM ENGINEER, INFRASTRUCTURE PLATFORM DIVISION, KAKAO PAY**

## Improving Operational Efficiency with All-Flash

After verifying performance through rigorous benchmark tests, Kakao Pay adopted Pure Storage FlashArray//X to optimize workloads primarily for its Relational DataBase Management System (RDBMS). With the Pure Storage platform, Kakao Pay is experiencing greatly improved reliability. Previously, problem resolution could take up to five weeks during failures. However, with Pure Storage delivering up to 99.9999% availability, there have been no disruptions due to storage issues since its implementation. Kakao Pay now spends much less time and fewer resources on system recovery and incident response, greatly enhancing operational efficiency.

This exceptional reliability gave Kakao Pay the confidence to deploy additional Pure Storage FlashArray//C units to provide the perfect balance of cost and performance to support a database upgrade, empowering the company to consistently deliver reliable financial services.

Joo-Seung Park, System Engineer in the Infrastructure Platform Division at Kakao Pay, says, "Pure1 provides us with a user-friendly UX/UI that makes it easier to proactively manage our storage and avoid issues before they arise. Pure's non-disruptive upgrades also eliminates productivity loss and downtime during data migration and storage capacity expansion, ensuring business continuity."

The database recovery time decreased dramatically from 12 hours to just 3 hours—a 75% improvement. Data migration time also decreased significantly, from 12 hours to less than 1 hour—a 91% reduction.

Previously, the time and costs of building hundreds of servers limited the company's ability to scale in a server-based environment. Now Kakao Pay can scale without being constrained by server infrastructure, expanding database capacity in three hours instead of six weeks—a 99.7% decrease.

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**ABOUT DMI SYSTEMS AND PURE STORAGE**

Since 1994, DMI Systems has partnered with Pure Storage leveraging 30 years of system integration (SI) experience to provide services in public, manufacturing, education, telecom, finance, and healthcare.
www.dmisys.co.kr

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**SYSTEM ENGINEER, INFRASTRUCTURE PLATFORM DIVISION, KAKAO PAY**

## One Step Closer to Carbon Neutrality

With the Pure Storage platform, Kakao Pay now operates in a much smaller footprint resulting in significant environmental savings. Just eight arrays support 2PB of data. The always-on inline deduplication, compression, and pattern removal technologies resulted in 6:1 data reduction, maximizing cost efficiency and reducing storage needs by 83%. The powerful flash storage also requires minimum space, reducing data center footprint by 92% for a 75% decrease in power consumption—425MWh of energy annually—and significantly decreased operating costs. The existing infrastructure was estimated to require approximately 334 servers to handle 2PB of data. However, by deploying eight Pure Storage arrays, efficiency was maximized. While these 334 servers would likely consume 39,294W of power and require a total of 334RU of rack space, the 8 Pure Storage arrays achieved the same capacity using only 9,952W of power and a total of 24RU of rack space.

The space savings and environmental benefits played a critical role in Kakao Pay choosing Pure Storage, as it supports sustainable data center goals. With all-flash storage from Pure Storage, Kakao Pay achieved a significant reduction in $CO_2$ emissions from its data center, along with a 75% annual reduction in power consumption. While the existing server-based environment was estimated to produce around 202 tons (202,544kg) of carbon emissions, this has been drastically reduced to 41 tons (41,415kg) after implementing Pure Storage—the equivalent of planting 3,884 trees over a decade. This progress is expected to accelerate Kakao Pay's initiative to build a sustainable data center.

Park says, "We are delighted with adopting Pure Storage, as it has significantly reduced power use and floor space, laying a solid foundation for sustainable operations. Moving forward, the Infrastructure Platform Division will continue to minimize resource waste and reduce environmental impact through sustainable IT infrastructure development."



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