



Objective

Upgrade ATM relay switching server to ensure continuous availability of ATM services and provide greater return on investment

Approach

Replace proprietary legacy server with industry-standard HPE Integrity NonStop X system to run transaction management software from Seiko Solutions, integrated with an external transaction management database to support 1,000 ATMs across Japan

IT Matters

- Ensures continuous availability for critical ATM relay switching
- Scales to support projected five-year data growth
- Consolidates ATM transaction services to simplify infrastructure

Business Matters

- Reduces annual system maintenance costs by approximately 50%
- Supports full return on investment within five years
- Optimizes resource utilization in line with business size and growth

Trust Networks strengthens availability of switching services for banking ATM

Enables around-the-clock ATM transactions with 50% lower maintenance costs



An operating company within the Internet Initiative Japan (IJ), Trust Networks provides banking ATM services in commercial facilities across Japan. As part of its business expansion, Trust Networks upgraded the server running critical relay switching for ATM transactions from an end-of-life legacy system to HPE Integrity NonStop X, built on high-performance Intel® Xeon® processors. The upgrade also included a move from Oracle Database to the HPE NonStop SQL/MX database. The Integrity NonStop X server now ensures continuous availability of relay switching for approximately 1,000 ATMs, which are connected to the banking system through transaction management software from Seiko Solutions.

Revamping an outdated ATM infrastructure

Trust Networks runs approximately 1,000 ATMs deployed at commercial locations across the Kanto, Chubu, and Kyushu regions of Japan. Each ATM is configured specifically to align with the business environment of the commercial premises in which they are located, such as a grocery store, train station, or hotel.

Trust Networks director, Takuma Suzuki, explains, "Trust Networks owns its own ATM devices, and it customizes the functions of these devices to meet the particular needs of an industry. One such typical function is the capacity to set the maximum credit limit that can be withdrawn by a user. While ATMs typically deployed in convenience stores are designed for multiple functions, our ATMs have been developed to precisely meet the needs of each particular business in which they have been deployed."

“The integration of the transaction management system proved effective in terms of reducing Oracle Database license costs. The annual maintenance costs of the system as a whole have been reduced by approximately 50%. It is expected that investments in the system will be recouped within five years.”

— Takuma Suzuki, Director, Trust Networks Inc.

The ATM relay server plays a central role in banking ATM services. It performs an intermediary role for the banking system that executes in real time the user authentication or format conversion in response to a withdrawal request made at an ATM. For Trust Networks’ ATMs, which have a set credit limit per industry and user, the relay server coordinates with a transaction management server, where withdrawal records are stored, to ensure that only withdrawals that do not exceed the credit limit are approved. In March 2017, Trust Networks launched a major overhaul of the platforms on which these operations have been running for the past 10 years.

Mr. Suzuki comments, “Until now, our operations used a fault-tolerant server that required a proprietary operating system from the vendor. Since this server was nearing end-of-life, we took the opportunity to perform a wholesale review of the hardware and software for the ATM relay server. We wanted to reduce costs while delivering the

highest availability to meet our mission-critical requirements. We also needed to ensure sufficient scalability and flexibility to support our five-year growth projections. The continuous availability of HPE Integrity NonStop X, along with SEGTRAN transaction management software from Seiko Solutions, satisfied these two demands.”

Integrity NonStop X enables continuous availability of ATM switching

The HPE Integrity NonStop family of systems has a formidable track record across the globe in the ATM and payment industries, including credit card billing. As the name of the product indicates, it is a server platform designed for companies that can never stop. The HPE Integrity NonStop X server adopted by Trust Networks is an industry-standard model built on Intel® Xeon® processors, offering improved cost efficiency and enhanced processing performance.

Head of Trust Networks Administrative Management Department, Yuji Owada, outlines the reasons why the HPE Integrity NonStop X server was selected: “Part of our company’s mission is to ensure a stable framework for provisioning banking ATM services. The fault-tolerant architecture of the Integrity NonStop X server is highly regarded for both its high reliability and continuous availability, which are necessary to fulfill our mission. Not only does this architecture provide completely redundant hardware, but it also overcomes any software problems. This allows processing to be continuously executed with zero impact on the ATM services we provide.”

With the HPE Integrity NonStop X server running on the Intel® Xeon® processor, even if a failure occurs in the primary process, it is instantaneously taken over by a backup process in a way that ensures the business services remain unaffected. This technology, referred to as a “process pair,” is exclusive to the HPE Integrity NonStop X server and extends from the hardware to the operating system (OS) and middleware in a tightly integrated architecture. Other fault-tolerant servers from vendors using proprietary operating systems are unable to match this capability.

Shinji Sato of the Trust Networks Administrative Management Department, points out, “The HPE Integrity NonStop X fully meets our performance requirements.

It has the capacity to perform processing at a level corresponding with our five-year transaction quantity estimates. Moreover, an extra CPU core can be activated by simply claiming an additional license. So even if the number of processing requests were to exceed our predictions, we have peace of mind knowing that we can immediately increase the required CPU resources. This offers a significant advantage of enabling the optimal utilization of resources and costs in line with business size and growth.”

Benefits of moving from Oracle database to NonStop SQL/MX

Mr. Sato adds, “More importantly, this solution allows us to use the industry-standard HPE NonStop SQL/MX database. While a conventional transaction management server that stores withdrawal records is externally constructed from an Oracle database and Linux® cluster, this is now incorporated into the ATM relay server. Operating the transaction management function provided by software from Seiko Solutions on HPE Integrity NonStop X simplifies the infrastructure, and is advantageous from the standpoint of reducing both operational load and costs. It also contributes to improved reliability and availability of the system as a whole.”

Hiro Kinoshita from the Seiko Solutions System Solutions Administrative Department, who oversaw the SEGTRAN porting, praises the advantages of running the software on the HPE NonStop SQL/MX database: “When a server node failure occurs in a common commercial database, a cluster reconfiguration and database restoration must be performed, which significantly impact the availability of the services. In contrast, with the HPE NonStop SQL/MX database, processing continues uninterrupted even when a node failure occurs. In combination with the HPE NonStop OS, this has enhanced SEGTRAN availability and has expanded the range of its use cases.”

Consolidation on an industry-standard platform

SEGTRAN transaction management software from Seiko Solutions provides real-time billing transaction functions via the ATM relay server. It has a proven record of success in connecting an ATM to a bank and facilitating secure online transactions. Therefore, a key aspect of the solution was porting this SEGTRAN software from the previous Linux environment to the HPE NonStop OS.

Mari Miyoshi of the System Solutions Administrative Department at Seiko Solutions shares her perspective: “For our SEGTRAN

solution, which has enjoyed success in the fields of both finance and distribution, we have had a long-standing desire to operate on HPE Integrity NonStop X. Through this project, we have been able to advance SEGTRAN to a new stage by porting it to the HPE NonStop OS.”

Hewlett Packard Enterprise (HPE) worked with Trust Networks to verify the initial stage of the solution design and implementation, including advice on how to leverage the HPE NonStop OS to maximize SEGTRAN availability.

Mr. Suzuki remarks, “While the porting presented some challenges, the outcomes were worth the effort. Together, Seiko Solutions and HPE extended themselves beyond their respective areas of expertise by undertaking this project. The development of this new solution is a direct result of the collaborative efforts of these two companies.”

With its early success with HPE and Seiko Solutions, Trust Networks continues to move systems previously running on Oracle Database and Clusterware to HPE Integrity NonStop X servers powered by Intel® Xeon® processors. This “NonStop predominance” is justified by a strong overall assessment of the performance and the return on investment of this fault-tolerant server.

Case study

Trust Networks Inc.

Industry

Financial services

Customer at a glance

Application

- ATM relay switching and transaction management

Hardware

- HPE Integrity NonStop X

Software

- HPE NonStop OS
- HPE NonStop SQL/MX database
- SEGTRAN from Seiko Solutions

Integrated transaction management maximizes ATM cost efficiency

The new ATM relay switching solution running on HPE Integrity NonStop X servers and SEGTRAN software were operational one month ahead of schedule. According to Mr. Suzuki, “The system demonstrated the expected performance, and we have continued to operate without incident ever since. This has resulted in a marked reduction in running costs.”

He continues, “The integration of the transaction management system proved effective in terms of reducing Oracle Database license costs. The annual maintenance costs of the system as a whole have been reduced by approximately 50%. It is expected that investments in the system will be recouped within five years.”

By integrating communication between SEGTRAN and the HPE Integrity NonStop X server powered by the Intel® Xeon® processor, Seiko Solutions has demonstrated its willingness to venture into new fields.

Ms. Miyoshi notes, “We can propose SEGTRAN confidently for use in highly secure, mission-critical operational environments. We look forward to pursuing additional markets and business opportunities in close collaboration with Hewlett Packard Enterprise.”

Mr. Suzuki concludes, “We have removed all obstacles to achieving our goal of reducing costs while delivering the highest availability for meeting our mission-critical requirements, and of ensuring scalability and flexibility that supports our five-year growth strategy. Trust Networks plans to expand its nationwide network of ATMs into a range of other industries over the next five years. The capacity for SEGTRAN to perform electronic money transactions or prepaid card billing processes has prompted us to consider expansion into new services. We look forward to enjoying continued support from HPE and Seiko Solutions.”

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