



*“Double-Take Availability represents a strategic architectural enhancement that offers a high level of reliability for critical back-end systems at a reasonable price. We protect our POS, membership management and other systems critical to the operation of our gas stations with automatic recovery so our retail sales and services business always operates normally 24 hours a day.”*

— Guo Zhicheng, Information Team Manager of the General Manager’s Office, Mech Smile

## Business Profile

Company Name:  
Mech Smile

Headquarters:  
Tainan, Taiwan

Industry:  
Chain of Retail Gas Stations

Revenue:  
TWD 14.8 Billion  
(USD 494 Million)

Founded:  
1992

Vision Solutions Product:  
Double-Take Availability

Implementation Team:  
Taifon Computer  
Zero One Tech

## Critical Issue

Mech Smile operates a chain of retail gas stations in Taiwan. These gas stations are open 24 hours a day. Competitive leverage is gained through the use of a membership system that awards points. When this system and others used to manage POS and accounting fail and are unavailable, the company’s profitability drops and customer service suffers. With many of its business-critical systems hosted on virtual machines running VMware vSphere, the implementation of a strategy that ensures the availability of these systems is essential.

## Results

- Enhances the reliability of front-end services which drive operational sustainability.
- Active monitoring detects failures and starts the recovery process automatically. This shortens the recovery time.
- High Availability can be achieved with only minor enhancements to the existing architecture.
- Compatibility with VMware vSphere enhances configuration flexibility.
- No additional servers are required for a clustered system. This represents a significant cost savings.
- Real-time replication to the target system keeps the backup system up-to-date. The backup system is always synchronized with the production system.

## Technologies

- Double-Take Availability
- Microsoft Windows Server
- VMware vSphere

## Business Challenge

Mech Smile gas stations are open 24 hours-a-day. Each store includes systems for POS, membership points management and enterprise debit accounting. These retail systems are closely tied to operating revenues. System faults will cause settlement errors in the membership points management system, which in-turn have an impact on quality of customer service at the retail level. Settlement errors also result in cash flow errors and eventually increase operating losses. According to Guo Zhicheng, the Information Team Manager for the company, “Using the membership system as an example, an interruption in service will affect gift redemption, which further causes distribution budget overruns, while instability in the debit account system leads to the reporting of excessive sales of petroleum products. This also seriously affects our front-end operating revenues.”

Apart from day-to-day operations, other threats exist. As an example, wind damage caused by Typhoon Morakot in August, 2009, prompted senior management to deploy remote backup technology. At that time, serious flooding in the head office almost damaged the data center. Over time, it was clear that the recovery capabilities offered by this system, along with the high cost of operation did not meet the expectations of the company. Another solution that could restore operations more quickly had to be considered.



## Solution

Double-Take Availability replicates all business-critical transactions relating to the membership, POS and financial management systems to a backup system in real-time. This comprehensive and highly reliable architecture continuously monitors the health of critical physical and virtual systems and automatically starts the recovery process if a serious system failure is detected. Remarkably, the entire recovery process takes only 10 minutes, so normal gas station operations are far more resilient.

Unlike the dual active mode common to clustered environments, only one iteration of the operating system runs at a time and only one set of licensed software needs to be purchased to meet the demands of Double-Take's High Availability environment.

Mech Smile transmits production transactions in real-time to virtual machines in the target data center over the Internet. When a problem occurs, Double-Take Availability recovery processes automatically prepare the remote virtual machine environment to take over production computing tasks. This guarantees normal on-going day-to-day operations at the company's gas stations.

According to Guo Zhicheng, the greatest benefit of implementing Double-Take Availability is the enhanced reliability of all critical IT systems. Additionally, management's workload has lessened. Members of the IT team do not need to constantly monitor the system to ensure normal operation, or worry about its stability. Morale has improved and employee efficiency has increased.



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