



CASE STUDY:

CUSTOM VIRTUALIZATION: SUBWAY'S SOLUTION



MISSION ACCOMPLISHED

VIRTUALIZATION: THE SUBWAY SOLUTION

IIS increased Subway's flexibility and responsiveness with a fast and reliable virtualization solution. Historically, many companies have hesitated to virtualize business-critical applications, but IT departments are revisiting the benefits based on the availability of affordable, powerful hardware combined with flexible virtualization software. IIS has crafted a solution that quickly provisions SQL servers while maintaining performance and allowing end users more efficient access to the information they need. As a result, the IT staff has been able to shift its attention to other revenue-generating projects.

A Global Chain

Subway is an internationally recognized sandwich chain. Based out of Milford, Connecticut, Franchise World Headquarters began as a single sandwich restaurant in 1965. In 1974, they began franchising to grow at a faster rate, and today there are more than 38,000 Subway franchises in 99 countries. Franchise World Headquarters distinguishes itself by providing its franchisees with a business model that is consistently rated no. 1 in the industry.

The Building Blocks

Subway had already virtualized 70 percent of its servers using HP servers and storage provided by IIS. Two physical SQL enterprise servers remained, designed to store and analyze customer transactions. These systems were important for Franchise World Headquarters to mine transaction details that identify possible trends and make more efficient business decisions in regards to product development and marketing at a localized level.

Subway's IT staff also wanted to create an environment where it could spin up new SQL servers on an as-needed basis. This would reduce the amount of time required to provision servers and provide a quicker time to market. The solution would ultimately reduce administrative costs and allow the IT staff to work on other projects more directed at generating revenue.



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The IIS Mission

IIS got the call when Subway discovered that it required infrastructure enhancements. Restaurant IT needed to improve its responsiveness when it came to deploying and managing SQL servers. They wanted to employ a private cloud that would let them roll out new servers on an as-needed basis and develop a proper test/dev environment. Subway Systems Manager Don Milnes said they hoped to provide a Continuous Delivery environment where code could be moved through segregated environments, representing the final production environment. At the end of the day, the virtualization solution needed to meet or beat the performance of their existing physical hardware solution.

"IIS has taken the time to develop a partnership with Subway, learning our business over a number of years and never pushing product to get a sale until they understood what the goal for our business was and making sure their solution matched the business case," Milnes said.

Tailoring the Perfect Fit

Virtualizing SQL servers is a challenging proposition that requires careful architecting of the virtualization and hardware platform. SQL applications tend to require significant amounts of processing power, memory and I/O. To meet these challenges, IIS designed a private cloud-based solution to meet the requirement for rapid provisioning. IIS chose VMware vCloud Suite Enterprise because it is the only virtualization solution supporting Monster Virtual Machines (VM) capable of providing up to 64 virtual CPUs and 1 TB of RAM. Additionally, vSphere 5.0 has provisions that specify a guaranteed I/O profile for each VM in the cluster. The hardware platform chosen must also be able to support several of these Monster VMs. IIS' solution was based around the HP DL980 server family. These servers can provide up to 160 virtual CPUs and 4 TB of RAM. Fusion I/O accelerators were used in each host. These accelerators are capable of providing up to 500K IOPs of sustained throughput.

The integration of this technology offered Franchise World Headquarters several distinct benefits. In addition to providing a platform capable of sustaining the rigorous demands of a virtualized SQL platform, the VMWare product also allows for cloning production servers for use by the product development, test and Q/A teams. This allows for seamless integration from coding to delivery of business applications. Part of the vCloud Suite, vCloud Director employs LinkClone Technology, which significantly reduces storage requirements. One OS partition is shared by all of the clones, with each clone using a small read/write partition for unique data associated with each clone.



Finally, it allows for the creation of a service catalogue that provides an inventory of environments that can be quickly generated to develop and test new features and products. Previously, developers would have had to wait several weeks to request, purchase and deploy physical servers. The Service catalogue allows IT to quickly choose the requested configuration option through the use of a self-service portal and automatically provision the requested virtual environment in 15 minutes – pending administrative authorization.

The solution, Milnes said, emphasized speed. Adding the vCloud suite to their incumbent hardware will allow Subway to deliver code even faster.

“Environments can be built up or torn down rapidly, allowing us to deliver end products to our users faster and with fewer defects,” he said.

IIS provided the proposed solution and delivered the integrated hardware and cloud operating environment in a little over four weeks. The services provided included hardware and software integration, custom scripts and knowledge transfer.

From Two Hours to Ten Minutes

At the end of the project, IIS erected a right-sized infrastructure in a very short timeframe. The solution allows Subway to provision and create servers as needed in ten minutes instead of two hours, Milnes said. As a result, Subway is better positioned to anticipate customer demands and keep its IT staff ready to tackle other business needs.

The virtualized server farm also provides green benefits – both in the environment and the bottom line. Virtualization will reduce cooling and power requirements, saving money and reducing the environmental impact.

“To deliver this project without using the vCloud technology and the ability to hot clone and ‘spin up’ environments would have required several additional full time staff positions and additional hardware for storage and servers. I do not believe we would have had funding approved to support this application in a traditional manner, so the cost would be in lost revenue resulting from being slower to market and unable to react quickly to our consumers,” Milnes said.



“THIS PROJECT...WOULD HAVE REQUIRED SEVERAL ADDITIONAL FULL TIME STAFF POSITIONS AND ADDITIONAL HARDWARE FOR STORAGE AND SERVERS. I DO NOT BELIEVE WE WOULD HAVE HAD FUNDING APPROVED TO SUPPORT THIS APPLICATION IN A TRADITIONAL MANNER, SO THE COST WOULD BE IN LOST REVENUE RESULTING FROM BEING SLOWER TO MARKET.”



The IIS Impact

This virtualization solution is another success story for IIS, a company that creates, fixes and solves IT dilemmas that are “all in, all the time.” Under the company’s “Mission Possible” strategy, employees combine the latest technology with superior knowledge of the industry and an appreciation for the bottom line of every project. And as solutions are being implemented, IIS team members remain vigilant in overseeing the project at all times.

IIS understands customers are doing their homework, and approach sales reps with an ever-deeper understanding of the process. The economy is rough and IT is constantly evolving, but when the dust finally clears, IIS’ can-do attitude routinely propels business partners into the future.

