

Case Study:

Leading a Virtual Desktop Revolution at One of the World's Largest Banks

Worldwide financial services and banking enterprises undoubtedly have a lot to worry about in today's volatile business environment. See how one of the largest, most profitable banks eliminated one IT-related headache by taking an unprecedented first step away from fat PCs and towards the new world of virtual desktop computing and the cloud – and lived to tell about the benefits.

CUSTOMER PROFILE & BACKGROUND

Computing on Wall St. – along with everything else – is fast-paced, aggressive, and strenuous. From using four monitors (or more) to working on four hours of sleep (or less), IT users in the financial realm live in a world of high pressure and higher demand. They need technology that can match their intensity, and as one large bank began to realize in 2009, traditional desktop PCs were no longer up to the challenge.

When it came time for this banking leader to replace 150,000 desktops company-wide, their talented IT team had a decision to make: Live in the world of loud, energy-hogging, IT-labor intensive PCs, or make the transition like so many others had done in other industries into the world of thin clients, centralized computing, and the cloud.

THE GOALS & VISION

Ultimately, the global bank had a few primary goals:

- **Increase desktop flexibility and centralize IT management**
- **Lower IT costs**
- **Maintain or exceed current security standards**

The sheer size of the firm had resulted in a precipitously growing price tag on IT costs. Managing hundreds of thousands of desktops worldwide had become a very costly and time-intensive support program. From troubleshooting to pushing software updates, managing individual PCs was transforming from a daunting task to a noticeable and concerning line item.

In order to increase flexibility and reduce desktop management costs, the bank wanted to centralize image management so that every virtual desktop was built on-demand from a set of image components rather than mapping each user to a static and persistent desktop.

Initial discussions with Devon IT prompted the firm to consider replacing 150,000 aging PCs with dynamic virtual desktops that could be provisioned securely in seconds with the correct applications, configurations, and access controls while also being accessible from any computing device.

To make the transition from physical to virtual desktops, Devon IT and the bank envisioned a Virtual Desktop Infrastructure (VDI) deployment where desktops would be delivered securely from globally distributed datacenters. In order to ensure user acceptance, the bank decided they would need to deliver a computing experience and performance that was better than their existing physical PCs.

THE CHALLENGES

Devon IT had helped hundreds of companies make the switch from PCs to thin clients, but this large financial institution had some unique challenges that had to be addressed.

User Experience

- **Power:** The VDI solution needed desktops advanced enough to support power users. Multiple screen use was standard in the majority of the firm's environments.
- **True Desktop Experience:** The global company had datacenters deployed in various countries. Latency issues with thin clients could not persist anywhere – users needed an experience that rivaled or exceeded the traditional Windows® experience.
- **Multimedia Support:** Video training sessions were conducted frequently across all levels of the business using Windows® Media Files. Playback quality needed to be exceptional, and the VDI environment needed Codecs required by Citrix to perform.

Custom Software Needs

The bank had previously contracted developers to architect a custom Citrix platform. Part of the software customization included a secure web portal for username/password log-in credentials and email access.

Due to the complex software configurations already in place, migration to the VDI infrastructure possessed some potential road blocks and barriers. Significant expertise would be required to navigate this software ecosystem.

Security

The firm's databases housed the personal and financial data of hundreds of thousands of people worldwide. Preventing data leaks was obviously of utmost importance to the bank, and maintaining extremely high security for these customers and stakeholders was both a business and moral necessity.

Additionally, legal pressure on financial institutions to provide air-tight security was steadily increasing. With new laws and compliance regulations seemingly released daily, the bank had even more reason to do whatever was necessary to enact a safe and secure transition between IT environments.

New Database Functionality

Taking advantage of a new, powerful VDI infrastructure meant the possibility of changing databases, a potentially tedious task. Instead of using their traditional MS-SQL database, Devon IT proposed using a MySQL database that would work in conjunction with its Echo® Thin Client Management Software. IT directors in both the firm and Devon IT worked together to develop ways that this transition could be achieved smoothly.

THE SOLUTION

The global bank partnered with Devon IT to drive the largest VDI deployment in the history of the financial services sector.

Desktop Replacement

The bank deployed thousands of Devon IT's TC5 and TC5c thin client devices.

The **TC5 thin client** was the industry's first thin device powered by the Intel® Atom™ processor, and the first to display dual DVI. The **TC5c thin client** was also an Intel® Atom™-based device but with an extremely small footprint. IT administrators at the firm chose these high-powered devices primarily because of their ability to offer users a true desktop PC experience.

The firm also deployed Devon IT's **VDI Blaster™** software on thousands of aging PCs. VDI Blaster™ extends the life (and capital investment) of desktop computers by turning them into thin clients. IT administrators can install VDI Blaster™ through a USB/CD, dual boot mode, or full hard drive installation. The firm saw this as an excellent way to transition away from PC computing yet still allowed them to get the most out of their initial IT investments.

Management Software

All of these VDI-based devices were managed by Devon IT's **Echo™ Thin Client Management Software**, which it had been developing for years. Echo™ Management

servers were able to scale to **60,000+ consecutive heartbeats** – impressive network traffic, especially for devices connecting remotely. Echo™ reported to a central database which replicated into another database for redundancy.

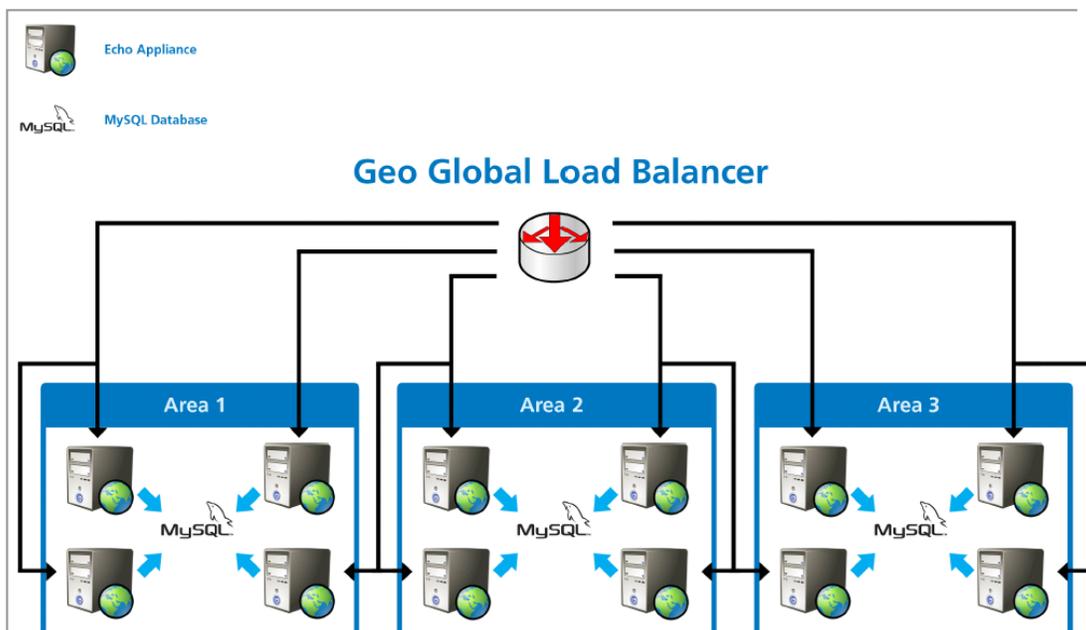
The Echo™ Management software automates the distribution of settings and connections to the terminals. Administrators could then create or copy new arrangements of settings, connections, and disk images to tailor the IT environment to their needs. Among the many available settings utilized was the ability to apply a password for the DeTOS control panel that prevented the end users from altering or creating connections, giving administrators greater ability to prevent end user error.

The Echo™ server was also used to push out new DeTOS images to the terminals. By attaching a new disk image to a default profile, the zero touch upgrading further simplified the management process. When a terminal was turned on, it connected to the Echo™ server and compared its image to the one contained within the default profile. If the two did not match, the terminal automatically reimaged itself with the desired version. By having users restart their terminals, or even by rebooting a terminal remotely through the Echo™ software, reimaging was greatly simplified.

Server Deployment

Each geographical location hosted two Echo™ management servers. One server hosted a local MySQL database which the second server connected to remotely in order to create a single point to update and read from. The MySQL database replicated to another like database to host a redundant solution.

The firm also used Cisco Global Site Selector (GSS) as a DNS/load balancing solution to ensure each thin client reached its correct stream of management.



Solution at a Glance

- Thousands of TC5 and TC5c thin clients deployed
- Thousands of PCs transformed into thin clients via VDI Blaster™
- Echo® Thin Client Management Software used to manage all terminals
- Seamless integration with Cisco Global Site Selector (GSS) DNS load balancing
- 1 server running a local MySQL database (each geographical location)
- 1 server connecting remotely to the MySQL database with redundancy (each geographical location)

THE RESULTS

The six-month transition required numerous and extensive on-site visits made by Devon IT. Devon IT also customized various software applications to complement Citrix's customized platform for the bank. The highest level of security was upheld while the bank's users began to utilize the new devices and VDI infrastructure.

The transition yielded many IT benefits.

- **Centralized Management:** All management is run through the Web browser, allowing administration from anywhere in the network.
- **Zero-Touch Upgrades:** New images are now pushed to the thin clients while the users are away.
- **Profile-Based Management:** End users have consistent experiences day after day, no matter what thin client they log into.
- **High Security:** No critical data is stored on the physical device. This is particularly beneficial for users who remove the physical device from the workplace as no data can be stolen, lost, or damaged.
- **Lower Energy Consumption:** The average power consumption of the thin client replacements is far less than traditional PCs. Electricity expenditures have declined.
- **Lower IT Costs:** PC management costs have been reduced by \$44 million USD since the VDI solution was implemented.

CONCLUSION

In a world of financial uncertainty, this major bank decided to eliminate any questions about whether a large scale VDI deployment was possible. The firm plans to roll out more thin clients and VDI Blaster™ installments as needed in their respective offices' environments.

Devon IT expects to see more enterprises flock to thin clients and VDI. While the cost, security, and manageability benefits have been proven, the technology took time to catch up. With high-powered thin client devices, management software platforms, and advanced connection broker software, it's no secret that the face of computing is changing. Devon IT is proud to have been one of the pioneers in this industry and looks forward to continued expansion of the virtual desktop market.

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