

## (Non) persistence pays off as Liquidware Labs helps investment services firm architect the right solution

*With Liquidware Labs, we achieved all the efficiencies and all the benefits of virtualizing desktops, without compromising the experience for users."*

*- Lead VMware Project Engineer*

**Company:**

Transaction processing and information services provider to the financial industry

**Desktop Users:**  
500 and growing

**Product:**

Liquidware Labs Essentials with Stratusphere FIT, ProfileUnity and Stratusphere UX

### OVERVIEW

A leading provider of back office and transaction processes services to banks, mutual fund companies and other financial services organizations built its business on innovation. During its nearly 40-year history the company had introduced several firsts to the market in areas like electronic transaction processing, document imaging and Web-based client services. One of the ways the company maintained its innovation advantage was by continually challenging the status quo of its own operations. That culture has helped the company become a leader in desktop virtualization. It has successfully virtualized highly secure desktops that process financial transactions around the world, was an early adopter of non-persistent virtual clones and is continually looking at what more it can do with its virtual desktop infrastructure (VDI).

## The Challenge

When the company first started exploring desktop virtualization, peers, best practices and supporting software solutions were rare. Starting in 2008 the company successfully completed a string of desktop virtualization projects, most involving no more than 75 desktops. These early efforts featured persistent VMs in virtualized sessions and sometimes made use of Microsoft roaming profiles as an enabling technology, which had notable limitations in that its use required a great deal of manual support.

Soon a “killer app” presented itself to company, one that would radically change the scale of its VDI and would require a new approach. The East Coast office that had spearheaded desktop virtualization had been increasing collaboration with a business unit in the Midwest. The two organizations wanted to be able to transfer more work to the Midwest, to better balance workloads and take advantage of lower operating costs. However, different desktop environments at the two facilities were a barrier to increased collaboration. Desktop virtualization offered the solution.

The company wanted to create a private network to host virtual desktops that employees in the Midwest could access to seamlessly run applications despite the IT infrastructure differences. The project would involve creating hundreds of virtual desktops and could grow to thousands – far beyond the scale of anything it had tried before. The company wanted to create a private network to host virtual desktops that employees in the Midwest could access to seamlessly run applications despite the IT infrastructure differences. The project would involve creating hundreds of virtual desktops and could grow to thousands – far beyond the scale of anything it had tried before.

The desktop virtualization team discussed these ideas with VMware and three major challenges soon became clear. First, at the scale the client envisioned, solely persistent VMs would overwhelm the data center by consuming IOPs and storage space. Second, non-persistent linked clones were a new concept at the time, with few users or best practices to reference. Third, the new architecture and greatly expanded scale meant the company would need much more visibility into the virtual desktop environment, and better tools to manage it than it could get from its existing infrastructure.

“We needed to do everything we could to get away from using roaming profiles, and VMware vCenter only gets you so far with the metrics you need to understand issues and address trouble areas,” said a VMware engineer who was a lead on the virtual desktop team.

## The Solution

VMware reps recommended that the team evaluate Liquidware Labs’ solutions for planning, managing and optimizing virtual desktop infrastructures. Liquidware’s Essentials suite includes Stratusphere FIT™ for assessing virtual desktop needs and designing the environment, ProfileUnity™ for managing the migration to VDI and Stratusphere UX™ to provide visibility into virtual desktop performance and to optimize the environment. Soon after assessing these products, the company decided to make them a foundation of its evolving and expanding virtual desktop infrastructure.

“Just looking at the products brought to light some issues we had glossed over when we started planning,” said the VMware engineer. “Stratusphere FIT saved us a lot of pain later on because it helped us do planning and determine configurations that would provide outstanding performance.”

Part of the planning included moving away from persistent VMs. "Putting 2,000 persistent desktops in the data center just wouldn't be efficient," said the VMware engineer, who believes the project resulted in one of the first uses of non-persistent linked clones in a production environment.

While the client team was learning how to create and implement non-persistent linked clones, Stratusphere FIT provided valuable information on the needed performance, such as CPU, memory and I/O allocations for each desktop and the optimal use of shared images.

For the initial rollout the company selected 60 workers with fairly stable desktop needs. These users primarily run Microsoft Office applications in the Windows 7 operating system. This initial group used a single core desktop image that provides consistent performance whether it is accessed on the East Coast, Midwest or anywhere else. Some users initially resisted virtualized desktops, but now many employees are getting better performance from their virtual desktops than they did from the legacy physical PCs they replaced.

### The Benefits

For the company, delivering non-persistent linked clones to their users without retaining the user personalization was not an option. A key success criteria was user acceptance of the virtual desktop and in order to deliver a quality experience but do it cost-effectively, the company decided to pair user virtualization with the non-persistent linked clones model. It turned out to be a fairly straightforward job to install ProfileUnity to deliver the user personalization part of the solution. Allowing the users to retain their customizations to their desktops was a huge factor in their acceptance of the new model.

"We're huge advocates of ProfileUnity. I don't think any organization should consider desktop visualization without it," said the VMware engineer who was a lead on the project. "We've been extremely empathetic to our user and in an effort to ensure this was a positive transition from physical to virtual we leveraged ProfileUnity to facilitate the delivery of a personalized non-persistent linked clone. From our user's perspective, they have all their personal profile related attributes, icons are where they've set them, etc."

Stratusphere UX has also been instrumental in helping us sell this transition to the company's users. "We learned that people were actually experiencing a lot more problems with their physical environments than they were reporting. With Stratusphere UX, we're proactively identifying these problems in the virtual desktops. It has made it so easy for us to resolve issues and optimize performance."

The initial rollout of 60 desktops was soon expanded to 500, which includes support for more sophisticated transaction processing work. The company achieved its goal of providing a consistent, reliable experience and plans to expand the infrastructure to 2,000 desktops within 18 months of the initial rollout.

"The biggest difference between virtualizing servers and virtualizing desktops is taking into account the whole user experience and optimizing it. Virtualizing applications and hardware is the easy part. When people sit down to use those applications, how can you ensure the user has the same experience every time? With Liquidware Labs, we achieved all the efficiencies and all the benefits of virtualizing desktops, without compromising the experience for users."

