Liquidware Labs™

Customer Profile

DH Tech

Stratusphere Helps U.S. Government Agency Optimize Largest Desktop Transformation Project

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> *- Adam Dickerson*
> *DH Technologies Solutions Architect*

Organization:
Federal law enforcement agency

Virtual Desktop Users:
55,000 total users,
of which 35,000
are concurrent

Products:
Stratusphere FIT™
Stratusphere UX™
ProfileUnity™

Overview

A U.S. government agency is creating a virtual desktop infrastructure for 55,000 users that will allow it to conveniently present information from classified and unclassified systems to authorized users in a single-desktop view. The project represents one of the largest virtual desktop environments ever developed and is designed to improve desktop performance and make desktop operations easier to support.

The Challenge

The agency worked with Dell and DH Technologies, a Liquidware Labs Acceler8 partner and Center of Excellence that specializes in virtualization and IT integration in the federal/DoD space. These experts were called in to plan and implement one of the largest desktop transformation projects in history, which encompassed the transition of 55,000 workers from physical to virtual desktops. The project scope included planning the architecture for a complete, new infrastructure, including storage, networking and application management, to support virtual desktop users. Security was a critical consideration because many employees need access to highly sensitive information.

As a step toward envisioning the target high-performance, high-security virtual desktop image and infrastructure design, a thorough assessment was done on the existing environment to get a complete understanding of the processes and current landscape. The assessment was critical for creating the vision for the future desktop environment.

The Solution

DH Technologies led a 10-week assessment of the client's legacy desktop infrastructure. During that assessment, it collected desktop configuration and performance information from more than 46,000 machines. The Stratusphere FIT desktop assessment solution from Liquidware Labs automatically collected most of the data that DH Technologies, Dell and the client needed to plan the new virtual desktop environment. The assessment produced more than 150,000 pages of data. Stratusphere FIT put the data in context so planners could easily understand it, identify requirements and specify a design and products to baseline the desktop experience. In conjunction with the technical assessment, DH Technologies interviewed multiple stakeholders. The mesh of the technical and narrative assessments uncovered information about the operational functions that were not widely known but were important to design and support.

"We didn't consider any other solution than Stratusphere for assessment purposes," said DH Technologies Solutions Architect, Adam Dickerson. "Stratusphere was the clearly right choice for this project, because my customer had never seen the depth of information that Stratusphere provides into a desktop with any other tool before."

Stratusphere FIT can be used on physical or virtual desktops. It captures details about applications and processes that run on the desktop and quantifies the baseline-user experience, which is essential so the experience is improved in the next-generation desktop. Stratusphere FIT collects and reports information about the applications and versions on each desktop—including identifying applications users installed themselves—along with consumption patterns for CPU, RAM, disk, graphics (GPU), network bandwidth, IOPS and more. The information helps users plan their configurations for desktop images, desktop pools and tiers, storage, server configurations and other components of the desktop infrastructure.

During the assessment, Stratusphere FIT identified more than 6,000 processes running on the federal agency desktops.

"The data really opened a lot of eyes," said Dickerson. "There were some surprises about resources and utilization that the client had not expected. The vast amount of data and metrics impressed our customer and helped us make sound data-driven decisions for the deployment."

The team then moved forward with planning the virtual desktop infrastructure, which would be composed of the VMware ESXi hypervisor and Dell XC powered by Nutanix hyper-converged software platform. The Dell appliances combine computing, storage and virtualization resources and have a custom Security Technical Implementation Guide (STIG) that attends to the security compliance needed for this customer. Based on the user-performance data collected with Stratusphere FIT, DH Technologies created four main categories of users (task users, knowledge workers, power users and graphics-intensive users).

The new virtual desktop environment also includes Liquidware Labs Stratusphere UX solution for monitoring the user experience and overall virtual desktop infrastructure performance. Stratusphere UX collects performance data, presents alerts about potential resource issues or other performance problems that are developing, and provides diagnostic features for troubleshooting. Stratusphere UX can be used as a standalone or integrated with monitoring solutions.

The Results

"Most VDI implementations fail because no assessment was completed before deployment," said Dickerson. "Liquidware Labs Stratusphere allowed us to highlight aspects of the desktop landscape about which the customer had no knowledge. Stratusphere allowed us to make data-driven decisions and calculations for the overall design, highlight underlying infrastructure issues, and establish the baseline of what a prime time VDI experience should be."

Some of the most important benefits accrued by the customer from the Stratusphere FIT assessment included:

- Pinpointing where packet loss and network latency were occurring, leading to critical infrastructure upgrades and improved network performance for all users.

- Discovering cost-savings opportunities with software licensing by identifying unused resources.

- Modernizing to support the software-defined data center (SDDC) and providing a solution-delivery model.

- Eliminating silos, enabling technical teams to have the visibility and data needed to do away with finger-pointing during troubleshooting.

- Identifying and removing unauthorized applications from desktops.

The Future

The client is going forward with its rollout, which remains on track to become the government's largest virtual desktop environment. The organization has added ProfileUnity from Liquidware Labs to manage user profiles. ProfileUnity lets users customize their standard virtual desktop images and automatically handles important tasks like folder redirection, Outlook management, location-aware printer access, application rights management and more.

Many organizations have reduced user login times by as much as 90 percent with ProfileUnity.

While the government agency continues its desktop transformation, it is also planning to migrate physical and virtual desktop users from Windows 7 to a newer version of the OS. It will use ProfileUnity to automate much of the migration. ProfileUnity automatically harvests users' settings, profile information, user-generated data and more. It cleans up the profile by removing any unwanted components or user-authored files and compresses the resulting profile, which is then easily and automatically applied the first time the user logs in with the new operating system. The result is a universal profile that can run on multiple versions of the Windows OS.

The client will also continue to use Stratusphere FIT for periodic assessments, and Stratusphere UX for ongoing monitoring and optimization of the desktop environment.

"Stratusphere has become a revered tool and the client wants to keep it in its toolbox," said Dickerson. "As the VDI landscape and use cases for the client expand, the staff relies on Stratusphere even more to deliver data to both technical and business management professionals for decisions that can directly affect the entire workforce."