

CASE STUDY



Vlaardingen City Council Empowers Workforce with Innovative High-performance, Low-cost Virtual Desktop Infrastructure

Dutch city's IT team simplifies administration and reduces costs of managing 600-employee workforce, while improving desktop performance

Solution Focus

- Virtual Desktop Infrastructure with VMware View
- Government

Summary of Benefits

- 3X faster desktop startups
- 6X faster application startups
- 80 high-performance desktops per vSphere server
- 30-minute setup for 80 "businessready" desktops
- 20% less supporting infrastructure
- 100% ROI within 1 year of purchase

The Challenge

Vlaardingen City's ICT Project Manager and IT Architect, Jeroen van der Vlies and team support all technology needs for the city's approximately 650 employees. Mr. van der Vlies views technology as key to improving Vlaardingen's service and product quality levels. He had long been intrigued by virtual desktop infrastructure's promise to simplify desktop administration while lowering physical machine costs; but traditional disk drive-based solutions could not provide the performance employees needed at an acceptable return on investment.

Vlaardingen needed a solution to meet the following requirements:

- 1. Deliver virtual desktop performance that meet or exceed physical workstation performance.
- 2. A simpler system that can predictably scale to meet future workforce growth.
- 3. Reduce physical workstations and administration costs.

The SanDisk® Solution

Mr. van der Vlies contacted the local IT reseller, DHS Automatisering, who recommended SanDisk's Fusion ioMemory $^{\text{\tiny{M}}}$ solution.

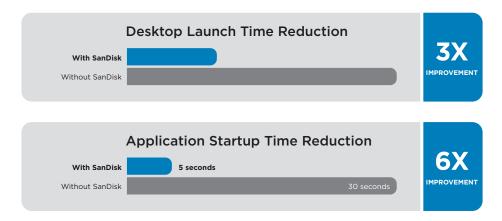
Anywhere Access at Triple the Speed

Traditional virtual desktop infrastructure solutions sometimes have a reputation for slow performance. Mr. van der Vlies found that the SanDisk powered virtual desktops offered significantly faster performance than their physical workstations.

He said, "Virtual desktops start three times faster than our physical machines. Applications like Outlook, which used to take up to 30 seconds to load, now load in under 5 seconds. Employees can access the same environment from home or at any desktop in the office, which makes our users happy. The improved productivity makes the city council happy."

Mr. van der Vlies is thrilled and told us, "We got 100% ROI in the first year of deployment, which affected 60% of our employees. This year, we are deploying to the remaining employees, and are now profiting from a 50% savings on all new workstation purchases."





"Virtual desktops start three times faster than physical machines.

Applications like Outlook, which used to take up to 30 seconds to load, now load in under 5 seconds. Employees can also access the same environment from home or at any desk in the office, which makes our users happy. The improved productivity makes the city council happy."

Jeroen van der Vlies, ICT Project Manager and IT Architect, Vlaardingen City

A Simpler, More Scalable System

Mr. van der Vlies wanted to reduce system administration overhead and realized that a good solution needed to do more than simply replace workstation administration with server and storage administration. The Fusion ioMemory solution was simple to implement, and scaled linearly, making future growth easy to budget for.

Mr van der Vlies commented, "Implementation was very easy and took less than half an hour—15 minutes to configure the server to be a member of the cluster, and less than 15 minutes to create 80 desktop images. Our engineer said it took longer to unpack the server than to make 80 desktops business-ready."

The SanDisk-powered virtual desktop infrastructure appliance is also easy to manage and offers better security options.

"SanDisk offers a complete 'simple' solution that can support up to 100 desktops in a single server. We can conservatively scale to 80 more desktops simply by adding another server," Mr. van der Vlies said. "In addition, the virtual desktops make our system more secure and reliable as we can now ensure user desktops have the latest patches and virus definitions, and keep our data secure behind our firewall."

Reducing Costs While Improving Workplace Flexibility

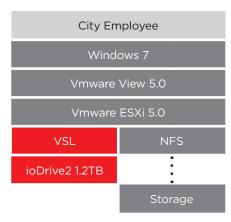
One might expect that a high-performance and scalable virtual desktop infrastructure system would be costly. The SanDisk-powered virtual desktop infrastructure system proved to be completely the opposite.

Mr. van der Vlies said, "The Fusion ioMemory ioDrive2® cards allow us to keep users happy while reaping the benefits of virtual desktop infrastructure. We no longer need to dedicate private workstations to every user, and can instead set up client workstation terminals for a flex workforce. This will allow us to cut our workstation, physical access terminals, and desk needs by 20%. The client workstations cost about half the price of our previous physical machines, and we are even investigating a BYOD (Bring Your Own Device) model."

Better still, the SanDisk solution cost less than the competition. Mr. van der Vlies explained, "The SanDisk virtual desktop infrastructure appliances are a complete 'building block' solution that is easy to budget for. Competing storage-based solutions we looked at were more complex, had high initial costs, and higher and less predictable workstation prices."



SanDisk Powered Software Stack





Fusion ioMemory™ - ioDrive®2

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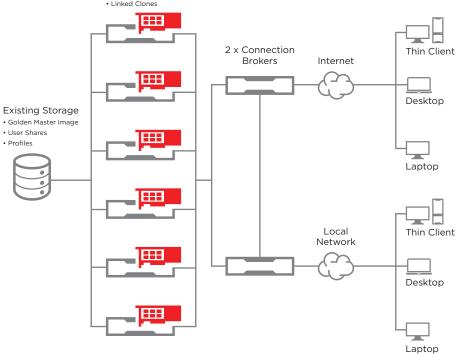
At SanDisk, we're expanding the possibilities of data storage. For more than 25 years, SanDisk's ideas have helped transform the industry, delivering next generation storage solutions for consumers and businesses around the globe.

Virtual Desktop Infrastructure Solution with SanDisk

VDI-Appliances

- 1 x ioDrive2 785GB card per server
- · Floating desktops
- Linked Clones

System Overview



Servers

- 6 x VDI-Appliances, 12-core processor, 144GB RAM
- OS: Windows 7
- Application: VMware View 5.0
- ioDrive2 card: 1 x 785GB
- 80 desktops per vSphere server

Storage

- Golden Master Image
- User shares
- · Roaming profiles

Summary

Implementing the Fusion io Memory solution gave Vlaardingen City Council the following benefits

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About Vlaardingen City Council

For more information on the Vlaardingen City Council go to www.vlaardingen.nl.

The performance results discussed herein are based on Vlaardingen City Council testing and use of Fusion ioMemory products. Results and performance may vary according to configurations and systems, including drive capacity, system architecture and applications.

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