

Customer Profile

The Frankfurter Bankgesellschaft (Switzerland) Ltd. is a Swiss bank located in Zurich that specializes in international private banking and wealth management services.

Solution Partner Profile

Axcept AG (a Swisscom Company) is a renowned Swiss ICT services company that specializes in two business segments: Consulting & Engineering, Operations & Support.

Business Objectives

- Secure, remote access
- Centralized management
- Reduce deployment costs
- Improve user experience

VDI Challenges

- Storage CAPEX costs
- Poor performance
- Support rapid growth

Atlantis ILIO Solution

- Reduced capacity by 80%
- Used existing storage
- Improved user experience

VDI Components

- Citrix XenDesktop
- Atlantis ILIO
- Trend Micro Office Scan

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Atlantis ILIO™ Solves the Virtual Desktop Storage Challenge for Swiss Bank

Frankfurter Bank cuts VDI storage costs 93% from \$2,223 per desktop to \$150 per desktop

Executive Summary

Frankfurter Bankgesellschaft wanted to implement a virtual desktop client environment to provide secure, reliable, remote access for employees and contract developers that could easily be managed by their IT staff. IT management was committed to the virtualization strategy, but the pilot VDI deployment suffered from severe IO bottlenecks and users complained about poor performance. The bank considered several options to improve storage performance, but costs were staggering, particularly given the scale of the bank's deployment and limited resources available.

Atlantis ILIO™ was recommended by the bank's IT partners Axcept AG (a Swisscom Company) and brought in for testing. The Atlantis ILIO VDI optimization software dramatically reduced IOPS required from the storage system, cut the storage capacity consumed and improved application response time for a fraction of the cost of buying additional SAN or SSD storage.

“Atlantis ILIO is an enabler for VDI. If you don't solve the storage IO problem, the cost per desktop is extremely high. For Frankfurter Bank, the cost per desktop was 2,000 CHF [\$2,223 USD] using our SAN. If you don't solve this intelligently, management won't accept the cost of VDI and it will lead to project cancellation. Atlantis ILIO enabled us to implement VDI for a lower cost than a physical PC by reusing our existing SAN more efficiently and reducing our storage costs by 93% in the process.”

Zdravko Ruzicic

Head of Systems- & Networkengineering
Frankfurter Bankgesellschaft (Schweiz) AG

Frankfurter Bank Background

The Frankfurter Bankgesellschaft (Switzerland) Ltd., headquarters in Zurich, is a financial institution established under Swiss law, specializing in international private banking and wealth management services. The bank currently manages investments in excess of 7 Billion Swiss Francs (\$9 Billion USD) and is growing rapidly.

The bank has two data centers in Frankfurt, Germany that support their operations in Germany and Switzerland. Their IT staff is quite small, 10 people, most of whom are focused on the core banking applications. So, it is critical that their infrastructure can be maintained by a limited staff. They have adopted a virtualization strategy to make IT operations more efficient and flexible.

VDI Challenges

Their initial reason to implement virtual desktops was to provide access for employees working remotely, as well as a relatively large, outsourced software development team working on a new core banking application. They wanted to provide a reliable, secure, fast computing environment for employees and contractors. The bank had two requirements for their VDI deployment:

1. **Cost** – The cost per desktop had to be less than the cost of individual PCs; and,
2. **User Experience** – The user response time had to be the same or better than that of a PC.

A pilot project supporting 30 desktops quickly overwhelmed their fibre channel SAN with the IO traffic that it generated. Users complained that their desktops were extremely slow. The bank's IT staff was aware that storage IO is a common problem with VDI performance and quickly identified the root cause of the problem. The team had allocated disks from their existing Hitachi Data Systems SAN and found that the virtual desktops were experiencing severe IO bottlenecks, even though the SAN met the specifications that they had been provided for IOPS per desktop. It was agreed that they could not expand the use of virtual desktops unless they found a way to optimize their storage system for VDI.

Considering the Alternatives

Frankfurter Bank knew that they needed to solve their storage challenge if they hoped to achieve their goal of delivering a better than PC user experience. They considered the following alternatives to solve the problem:

1. **Buy More SAN Storage** – Purchasing additional disks for their existing storage system would have increased costs to unacceptable levels. The bank calculated that they would need to allocate up to 1 physical SAN disk per virtual desktop to achieve their performance goals. The estimated increase in costs was 2,000 CHF (\$2,223 USD) per desktop in storage costs.
2. **Switch to SSD-based Storage** – Replacing fibre channel disks with SSDs would have improved performance, but that option was also ruled out because of cost – would have made virtual desktop more expensive than a PC.
3. **Atlantis ILIO with Existing Storage** – Deploy Atlantis ILIO VDI storage optimization software using the existing storage to eliminate the IO bottleneck, reduce the storage capacity required per desktop and accelerate desktop performance to improve the user experience.

The Solution

The Atlantis ILIO VDI storage optimization solution, recommended by the bank's integration partner Asept AG (a Swisscom Company), was the ideal solution. It offered dramatically improved desktop performances without having to purchase additional storage. The Atlantis ILIO software allowed the bank to immediately improve the initial, limited deployment, and will enable the scale-out of the implementation in the future to support an unlimited number of virtual desktops – using just software that integrates seamlessly into the existing environment.

Atlantis ILIO is a VDI storage and performance optimization software that complements existing VDI solutions from VMware, Citrix and Quest to cut storage costs, boost desktop performance and make VDI security economically feasible.

- 1) Atlantis ILIO delivers a desktop that is cheaper than a PC. Atlantis ILIO typically reduces storage traffic up to 90%, effectively cutting the amount of storage needed and enabling the use of less expensive storage options.
- 2) With Atlantis ILIO, virtual desktops are faster than a PC – delivering an amazing user experience. Very fast boot times and near instantaneous application launching – even from iPads.
- 3) Atlantis ILIO also enables the deployment of Anti-Virus agents without impacting the number of users that can be hosted on a server. Providing more cost savings as fewer servers are needed for the same number of users.

Atlantis ILIO Technology and How it Works

The Atlantis ILIO virtual machine software is installed on the same hypervisor or rack as the virtual desktops to optimize how Microsoft Windows XP and Windows 7 operating systems interact with storage. Atlantis ILIO technology including Content-Aware IO processing and Inline Deduplication is highly efficient and designed specifically for VDI workloads:

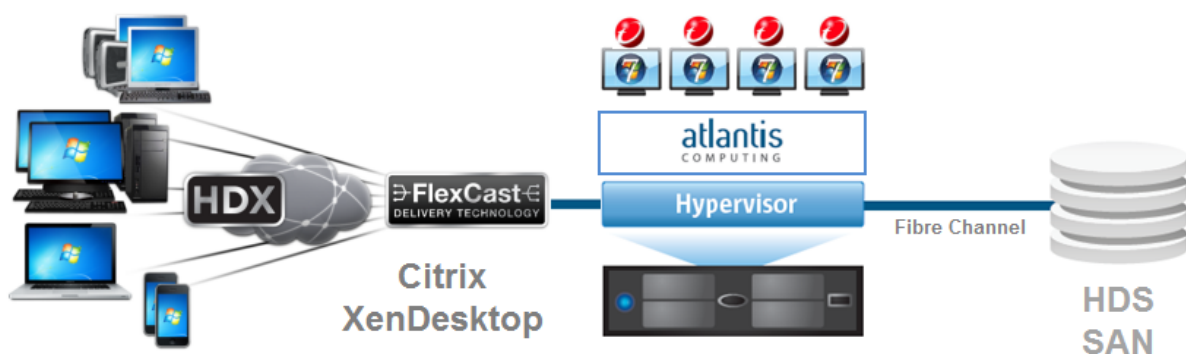
Content-Aware IO Processing

Atlantis ILIO software processes all VDI traffic locally with Windows NTFS file content awareness—within the same server or rack—to reduce the amount of IO traffic going to storage by 90% and eliminate the huge burden normally placed on a storage array by hundreds or thousands of virtual desktops.

Inline Deduplication for VDI Workloads

Atlantis ILIO de-duplicates in line all VDI images before they reach storage, effectively eliminating the need to store up to 99% of Windows image components, further reducing the amount of storage required for a successful VDI deployment.

Frankfurter Bank VDI Environment



Frankfurter Bank uses Citrix XenDesktop pooled desktops with Atlantis ILIO running on each server – alongside the virtual desktops. Atlantis ILIO presents an NFS datastore to the virtual desktops and processes all IO traffic coming from the Windows XP operating system and destined for the SAN.

After being optimized by Atlantis ILIO, traffic and unique data from the virtual desktop images are stored on the existing Hitachi Data Systems SAN. Within the virtual desktop image, Frankfurter Bank deployed its company standard Anti-Virus (AV) product, Trend Micro Office Scan. Because Atlantis ILIO is in place, using the Trend Micro AV agent does not have a negative impact on neither the amount of storage nor the amount of servers required for the VDI deployment. As the Bank scales its VDI deployment, it is considering moving to Trend Micro Deep Security to further optimize its virtual desktop image and leverage the unique capabilities of the purpose-built security solution for VDI.

Atlantis ILIO: VDI Performance Acceleration

The bank's goal was to make sure that performance using VDI was at least as fast as stand-alone PCs. The user experience with Atlantis ILIO was impressive, far exceeding their expectations. Instead of waiting for minutes for Windows XP to boot, or applications to start, they did so in seconds.

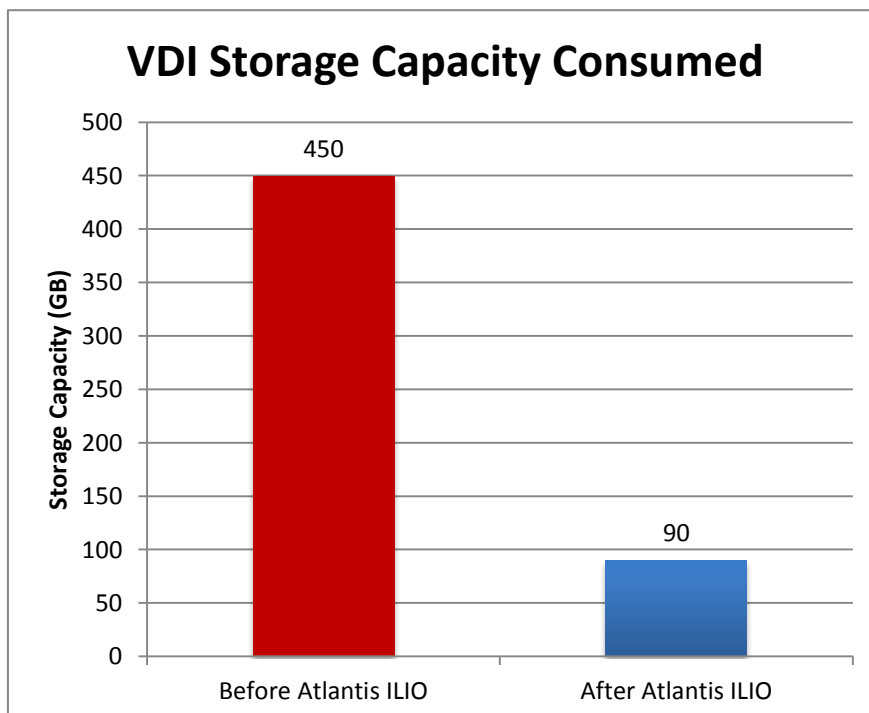
Atlantis ILIO addresses the virtual desktop performance problem without requiring additional storage infrastructure. It eliminates the storage bottleneck by effectively delivering a massive amount of IOPS to boost all aspects of virtual desktop performance including boot time, logons, profile loading, application launching, productivity tasks, and applications that are virtualized using Citrix XenApp, Microsoft App-V, VMware ThinApp and Symantec SVS.

Atlantis ILIO: Windows 7 Migration

Frankfurter Bank is planning to migrate users next year, in 2012, from the existing Windows XP environment to Windows 7 with Microsoft Office 2010. The bank's IT department had seen that Windows 7 boots much faster than XP on their physical PCs and were hoping that the migration would improve performance of their VDI pilot project. They also discovered that Windows 7 doubled the amount of IO used during the boot process, making the VDI experience without Atlantis ILIO, even worse. Therefore, Atlantis ILIO will be even more critical to the Windows 7/Microsoft Office 2010 migration project, to handle the increased IO traffic and deliver the performance that users expect.

Atlantis ILIO VDI Deployment Results

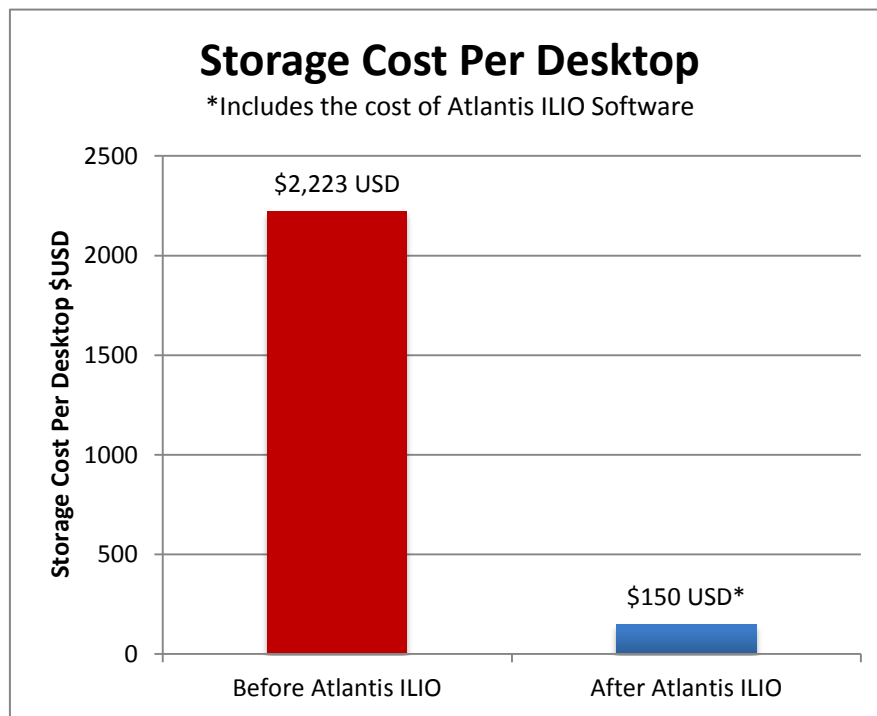
Atlantis ILIO: VDI Storage Reduction



In addition to IO traffic reduction and optimization, Atlantis ILIO also performs in real-time inline deduplication of storage requests by virtual desktops. This not only dramatically reduces the IOPS demand from virtual desktops, but also reduces the amount of storage capacity required by up to 90%.

In the bank's testing, they were able to reduce the footprint for their VDI environment from 450GB to 90GB, an 80% savings. As the number of desktops increases, Frankfurter Bank continues to see the storage capacity savings improve.

Atlantis ILIO: VDI CAPEX Savings



Deploying Atlantis ILIO reduced the cost of storage from \$2,223 USD per desktop to \$150 USD including the cost of the Atlantis ILIO software – a 93% savings. In addition, Frankfurter Bank will be able to avoid significant capital and operating expenses by:

- Minimizing incremental disk purchases or the need to purchase new storage systems – as the existing storage systems keeps being optimized by Atlantis ILIO.
- Eliminating the operational expenses including power, cooling and rack space for additional fibre channel disks.
- Leveraging existing PCs that might otherwise have to be upgraded to support the upcoming Windows 7 migration.
- Purchasing thin clients rather additional “fat” PCs.

Summary

The decision to select Atlantis ILIO ended up being quite simple. It delivered a stellar user experience for the bank's users, eliminated the IO bottlenecks and cut the amount of physical storage capacity required, dramatically reducing the cost of storage.

Without Atlantis ILIO, Frankfurter Bank would not have been able to meet their objectives and deploy VDI successfully.

The use of Atlantis ILIO allowed the bank to move forward with their VDI implementation. In turn, this will allow them to deploy the new core banking application and proceed with the planned migration to Windows 7 much sooner, more efficiently and while keeping their costs down. For users, it has dramatically improved their experience and ability to work remotely. Instead of dreading the implementation of virtual desktops, they are now looking forward to it.

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