



KROLL FACTUAL DATA CUTS COST, ADDS PERFORMANCE WITH XSIGO

Achieves 6X more bandwidth per blade chassis with 50% less infrastructure equipment

Kroll Factual Data, a member of the Alteryx family of businesses and a division of Kroll, the world's leading risk consulting company, provides credit reporting and independent verification services to mortgage lenders and investors, banks, credit unions, insurers, property management firms, regulatory and government agencies and other businesses across the United States. As an example of the firm's services, when a mortgage originator needs to check an applicant's credit, verify other requirements (e.g. employment, deposits, identification, etc.), and comply with government regulations, Kroll Factual Data is the go-to-provider of the needed information.

From their Colorado-based data center, the firm's nationwide service responds to over 300,000 information queries per day.

BUSINESS CHALLENGES

The company's primary challenge was to increase I/O capacity to support the

growing volume of client queries. Kroll Factual Data had virtualized its servers and storage, and therefore had the flexibility to re-allocate those resources as needed. However, the company's fixed 1G infrastructure limited both performance and flexibility, which ultimately limited efficiency.

"We generate a tremendous amount of server-to-server traffic as data moves among our various proprietary applications spread across 700 plus virtual machines, and that puts load on the network that can cause unpredictable performance," commented Galen Wiles, Kroll Factual Data's Director of IT. "Eliminating those bottlenecks was a key objective of this project."

Redundancy across all I/O connections was also essential to meet the stringent uptime objectives. And a simpler, consolidated infrastructure was desired to further increase efficiency and to accelerate future scaling projects.



OVERVIEW

INDUSTRY

Financial services

CHALLENGES

- I/O bottlenecks arising from increasing server-to-server traffic crossing the network
- Needed redundancy on all I/O connections to meet stringent uptime objectives
- Sought to complete virtualization landscape with virtual I/O

SOLUTION

- Two Xsigo VP780 I/O Directors, InfiniBand DDR 20Gb server fabric

BENEFITS

- 6X more bandwidth to each blade chassis
- Full redundancy on all Fibre Channel and Ethernet server I/O connections
- 50% less I/O cost, \$15,000 savings per blade chassis
- I/O bottleneck issue resolved in two hours vs. five days

“With Xsigo... we are able to process 50% more transactions through a single VM, which improves our response time and makes operations easier to scale.”

- Galen Wiles, Director of IT, Kroll Factual Data

ALTERNATIVES CONSIDERED

Because the company had already virtualized servers and storage, implementing a virtual I/O infrastructure seemed like the next logical step. Galen summarized the options, commenting, “We knew the benefits of virtualization, so we evaluated several options. A 10G Ethernet solution would have cost us about \$15,000 more per blade chassis compared with the Xsigo solution, and would have delivered 30% less aggregate bandwidth. Furthermore, to consolidate our Fiber Channel and Ethernet into a single link with 10G Ethernet would have required FCoE, which is something we did not want to implement.”

In the final analysis, Kroll Factual Data chose Xsigo virtual I/O due to its performance, cost, and simple scaling capabilities. “We consider ourselves leading edge, not bleeding edge,” Galen commented. “This was a fairly new technology, and we had actually bought our blade chassis without planning to implement Xsigo at first. But we evaluated Xsigo and gained comfort with it. We also did reference calls with another Xsigo customer who had over a dozen Xsigo boxes deployed. They were very happy with it. We did our homework, and ultimately it was an easy decision.”

SOLUTION DEPLOYED

The solution deployed consisted of a pair of Xsigo I/O Directors with 20Gb server interconnects, Dell blades, Microsoft Hyper-V software, Hitachi AMS 2500 storage arrays, and FalconStor storage virtualization software.

RESULTS ACHIEVED

The performance gained with Xsigo delivered tangible operational results. Galen commented, “With Xsigo, we gained 6X more bandwidth per blade chassis, which allows us to run more VMs per host. More importantly, we are able to process 50% more transactions through a single VM, which improves our response time and makes operations easier to scale.”

Furthermore, when changes are required, the Xsigo infrastructure makes it simple. “With Xsigo we can easily add more usable bandwidth to the blade chassis just by adding a cable,” Galen notes. “The automatic load balancing capability lets us add capacity as we need it, without adding CPU overhead.”

AGILITY BRINGS QUICK PROBLEM RESOLUTION

Galen recalled a recent time when virtual I/O enabled a rapid problem resolution: “We had an I/O bottleneck issue that was causing a switch to discard 70% of the packets it received. Naturally this caused a huge performance problem with the increased congestion from all the re-tries required. With Xsigo we simply created a new network connection on the affected hosts and moved some of the VMs to those new virtual NICs. The problem was solved in two hours, as compared with the four or five days it would have taken to fix with traditional I/O.”

FUTURE PLANS

In the future, Kroll Factual Data plans to bring more services into the Xsigo environment, including SQL and Oracle

instances and file services. Galen commented, “These applications will clearly add more bandwidth demand, but with the Xsigo I/O Director we know there is significant headroom to spare.”

Other future business requirements may demand an isolated operating environment for security purposes. In that case Galen notes that Xsigo’s I/O isolation capability may eliminate the need to build a separate environment for those applications, thus saving significant time and cost.

As the firm continues its virtualization journey, the IT department plans to evaluate virtual appliances such as firewalls and load balancers. “The next-generation data center will clearly be fully virtualized and completely re-configurable without physical change,” Galen concluded. “The Xsigo infrastructure gives us the ideal platform to build on.”



The Xsigo VP780 I/O Director consolidates server I/O by replacing a server’s multiple Ethernet and Fibre Channel interfaces with a single high-speed low-latency link.