OPEN Sports.com is Always in the Game with Xsigo Virtual I/O

Online sports entertainment firm implements I/O virtualization for remote management and scalability

- Highly scalable infrastructure
- 50% less total operating cost than conventional I/O
- Zero downtime

OPEN Sports.com aims to serve sports aficionados with a next-generation, sports experience guided by a user-first philosophy, extensive content, and innovative applications. Elements of this online service include rich-media content, real-time event information, and fantasy sports that let users participate in leagues or form leagues of their own.

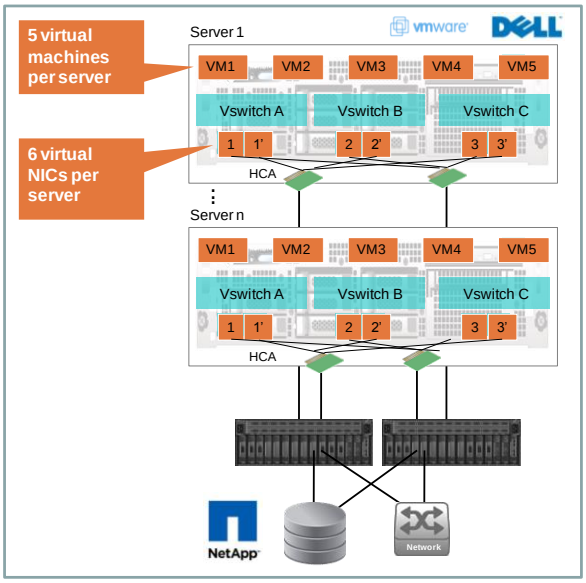
> "At half the total operating cost of conventional I/O, Xsigo virtual I/O absolutely improves our bottom line."
> - Ken Mark, CIO

Building a scalable, highly available infrastructure

Founded in 2008, the company's IT managers had the opportunity to architect a data center specifically designed to support their diverse requirements. An early decision was to deploy virtualized servers to capitalize on the flexibility and efficiency of this environment. Not only did virtualization provide the flexibility to shift workloads as requirements changed, it also helped ensure a primary objective of the site: uptime. Even with the business' complex IT requirements that spanned from database to web 2.0, they set a goal of 100% service uptime.

"The sports entertainment industry is very much a real-time, 24x7 enterprise, and our business hinges on providing users with a rich experience that is available at all times," commented Ken Mark, chief information officer at OPEN Sports.com. "This meant taking an uncompromising approach towards our system architecture."

To achieve this, the first tenet of course was redundancy -- all processes needed backups to eliminate downtime. The company's web apps ran on all servers, with five instances of the app running on each server. Each instance ran on its own virtual machine, and a load balancer distributed the workload to all virtual machines.



Connectivity was made redundant as well, with dual Xsigo VP780 I/O Directors providing connectivity to networks and storage. On each server, separate vswitches were

created for network, storage, and management connectivity. Each vswitch was configured with dual redundant virtual NICs, for a total of six virtual connections per server (two for networking, two for storage, and two for management). Two adapter cards per server provided redundancy at the host adapter level. The end result was redundant connectivity all the way from the virtual level (the virtual NIC) to the external Ethernet ports on the VP780s.

Virtual I/O delivers data center agility, ensures uptime

The second tenet was maintainability. Should a fault cause a server to go down, the load balancer would of course move that workload to another server immediately. But in the interest of maintaining service levels, it was important to quickly return that server to operation. Here virtual I/O provided a real advantage. Load balancers work by distributing load to various servers which are recognized by their IP addresses. All addresses are static, thus ensuring they remain consistent even through reboots. When a server had to be replaced, virtual I/O helped speed the process by allowing all I/O resources from the failed server to be fully replicated on the new server. When the new device was brought up, all IP addresses would appear just as they had on the original server, thus saving reprogramming time at the load balancer.

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- Ken Mark, CIO

A third attribute of the OPENSports.com infrastructure was scalability. As user demand grew, it was important to respond quickly with new capacity. Xsigo virtual I/O enhanced scalability in two ways:

1. **Simple infrastructure:** With Xsigo, only two physical connections per server were required to make all connections redundant. No additional edge switches were required.
2. **Fast configuration:** Since virtual NICs were software configurable, all attributes could be assigned on the fly. It was even possible to pre-configure NICs and load balancer settings before the servers were on site, thus saving time when the servers arrived.

Virtual I/O provides a solid infrastructure

With Xsigo virtual I/O, OPEN Sports.com implemented cost-effective, highly flexible connectivity that helped them to meet their uptime and cost objectives.

"OPEN Sports relies on Xsigo for 100% uptime," Ken concluded, "And, at half the total operating cost of conventional connectivity, Xsigo's virtual I/O technology absolutely improves our bottom line. We have achieved a fully lights out data center where simple connectivity changes that typically took days to complete are done in minutes. With Xsigo, our IT teams can spend time on strategic innovations rather than waste time on mundane management tasks."

About OPEN Sports:

OPEN Sports.com is the ultimate social sports destination online providing unparalleled content, diverse programming and next-generation fantasy sports tools for fans of all levels. Led by Mike Levy, founder of CBS SportsLine.com, and Rob Phythian, founder of Fanball.com, OPEN Sports' mission is to serve every sports fan with a next-generation experience that is guided by a user-first philosophy. Leveraging its cutting-edge platform, OPEN Sports delivers an approach to sports entertainment that enables fans to connect, inform and participate in a passionate community. For more information, visit www.OPENSports.com.

Xsigo is the technology leader in data center I/O virtualization, a solution that dramatically reduces operational expense by changing the way that servers are connected to networks and storage.

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