

A close-up photograph of a silver stethoscope with green tubing, resting on a reflective surface. The background is a solid red color.

HEALTHCARE IT SERVICE PROVIDER BUILDS AGILE, HIGHLY AVAILABLE INFRASTRUCTURE WITH XSIGO

Reduces complexity by 77%, boosts availability, cuts server costs by 50%

Cloud Proven Networks Provides IT operations for medical offices and clinics, offering services including billing, collections, medical records management, digital imaging, VDI, and VOIP. Founded in 1997, the firm now serves 600 physicians across eight states and provides services from two data centers located in Indiana.

BUSINESS CHALLENGES

As the firm embarked on a data center capacity expansion to accommodate their brisk 20% annual growth, one objective was to implement a more easily scaled infrastructure. Todd Hoopingarner, President of Cloud Proven Networks, explained, "With the accelerating transition to electronic medical records, our need for bandwidth is growing 30% per year, and storage is growing 60% per year, figures that we do not see abating. We needed an infrastructure that could expand on demand."

A second objective was to increase IT agility. The firm's services are custom-

ized to each client's needs, a business model that becomes increasingly challenging when you consider that client data must remain isolated to meet regulatory requirements. Todd continued, "Our competitive advantage is that we are very responsive to our customers' needs. We also ensure regulatory compliance, which imposes complex and changing demands on the way we handle customer data."

A third objective was to deliver uncompromising availability. For each server the firm deployed 12 network connections and 4 storage connections, an infrastructure that delivered full redundancy but was challenging to manage. Jeff Bills, Cloud Proven's VP of Information Technology commented, "With 16 I/O connections per server, finding and fixing I/O problems, while counting on the OS to effectively load balance all of the I/O paths, was a nightmare. Reducing complexity and increasing agility was a major objective."



OVERVIEW

INDUSTRY

Healthcare IT service provider

CHALLENGES

- Elasticity of service delivery
- Redundancy across all resources
- High performance
- Multi-vendor interoperability

SOLUTION

- Two Xsigo VP560 I/O Directors

BENEFITS

- Went from 16 I/O connections per server to two. 77% less infrastructure complexity for easier scaling, greater availability
- Redundancy on 100% of server I/O connections, simple multipathing
- Open source vendor flexibility and 50% server cost savings
- Future-proofed: Easy to accommodate any future I/O requirements

A final objective was to achieve predictable costs. Implementing a flexible, open source systems-and-standards architecture would create a greater level of vendor independence in hardware choices. The firm had relied on a single brand of servers, but this proved expensive.

"When our big-name server vendor came in with a big price increase, we knew that designing a vendor-neutral open source platform was the way to go," Jeff continued. "As a service provider, we need predictability and cannot accept the scalability limits and unpredictable future costs of traditional data center infrastructure."

OPTIONS CONSIDERED

Multiple infrastructure options were considered for the project. "We learned about Xsigo at VMworld, and put them on our list," Jeff recalled. "We also looked at FCoE, but found that it would have cost us 60% more to deploy than Xsigo, and would have been complex, slower, and difficult to debug. Ethernet is designed to provide a 'best effort' delivery of data. It did not make sense to try and shove a lossless Fibre Channel fabric across a transport method such as Ethernet in a best-effort fashion.

"Xsigo uses InfiniBand, which was designed as a non-blocking, low-latency and lossless fabric. It has a proven industry track record of performance and reliability in some of the world's foremost supercomputers and resource clusters. This fast, cost effective, and highly reliable design made Xsigo's InfiniBand fabric our choice."

50% COST SAVINGS, OPEN SYSTEMS FLEXIBILITY

The ultimate solution included two Xsigo VP560 I/O Directors, 1U Supermicro servers, Compellent storage, VMware ESX software, Arista 10GE switches, and Palo Alto Networks firewalls. The firm saved cost by deploying white

box servers instead of a brand name solution, and achieved an additional 50% cost savings because Xsigo required only one or two PCI slots per server, thus enabling the use of cost-effective 1U rather than 4U servers.

Jeff commented, "Xsigo's flexibility lets us run our older and newer devices side-by-side under a single I/O management framework while achieving flexibility that is superior to our high-cost servers."

AN EASILY SCALED SOLUTION

Xsigo also enabled easy scalability. The firm could now independently grow compute power, network connections, and bandwidth resources to meet changing needs, something that was very difficult to achieve with conventional I/O.

"To set up a single server, we used to require 16 new I/O connections and the switch ports that go with them," Jeff added. "Xsigo lets us grow bandwidth and storage with just two cables per server. Better yet, we wire the servers once and never touch them again."

XSIGO ENSURES LONG-TERM FLEXIBILITY

Xsigo also future-proofed the deployment. "With traditional I/O, you have to estimate what you need and then hope you can cost effectively expand it down the road," Jeff added. "We've been doing this for over eight years, and we know that it's impossible to predict every requirement. But whatever the need, it's critical that we respond quickly and provide great availability, all while delivering a cost effective service. That combination is much easier to achieve with the efficiency and flexibility of Xsigo virtual I/O."

SUPERIOR AVAILABILITY AND PERFORMANCE

Service availability and performance also benefitted from the simpler, faster fabric. Jeff continued, "With the Xsigo fabric and

our custom platform we can easily deploy more servers for high availability, and then seamlessly fail over to those devices with a complete transfer of I/O resources. This gives us predictable performance by effectively building a virtualized blade center.

"We don't want to move VMs around a lot to resolve I/O bottlenecks. It takes time and introduces risk. We'd rather the server just do its job. With Xsigo, bottlenecks are a thing of the past, which reduces our dependence on OS technologies such as vMotion."

XSIGO AGILITY PROVIDES FAST HELP IN AN OUTAGE

For a service provider, data center agility translates directly to superior customer support. Jeff recalled a time when a customer suffered an outage at his site, "All systems at their site were down due to a lightning-caused power surge. It essentially closed their 30-person practice.

"With Xsigo we were able to re-allocate servers within our shop to bring his applications in house and get him back up, with a dedicated network environment, in less than a day. Without Xsigo it would have taken at least a week to acquire all the necessary resources and rebuild the customer's environment."

"IT JUST WORKS."

"We let our clients focus on medicine rather than back office operations," Todd concluded. "Regulatory compliance is one example of a huge burden that we can lift by moving our clients' compute and storage resources from their clinic to our data center. With Xsigo, we deliver a scalable, cost-effective service that offers greater availability, faster performance, rapid disaster recovery and quicker change response than our customers could ever achieve on their own. And best of all, Xsigo is reliable. It just works."