

DH2i Helps Asante Strengthen its Position in Competitive Healthcare Environment

An agile solution for inevitable growth



The Company

- Regional healthcare system
- 700+ servers across 3 hospitals
- 50+ outlying clinics
- About 180 people in IT



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Primary Challenges

- Rampant SQL Server sprawl
- Growing licensing costs
- Need for increased agility

Introduction

As in many industries, changing market demands are taking their toll on healthcare organizations' IT departments. Health systems are being gobbled up in an eat-or-be-eaten environment that results in ongoing datacenter consolidation challenges. New mandates such as electronic medical record adoption and online consumer health-management offerings require high availability services to be spun up rapidly. And competitive pressures mean budgets are tight and IT needs to accomplish more with fewer resources.

This is the situation at Asante, a not-for-profit regional healthcare system that provides care to about half a million people in southern Oregon and northern California. Michael York is Asante's senior systems engineer for IT services. When he joined Asante in 1999 the organization had one hospital and about a dozen outlying clinics, with an IT staff of about 20 people managing 30 servers.

Asante now has over 700 servers spread across three hospitals, 50+ outlying clinics, and about 180 people in IT.

Like other organizations, Asante looked to virtualization to solve many of its datacenter challenges. Ultimately, though, rampant sprawl, exploding licensing costs, and increasing needs for agility led the organization to a new approach: instance-level high availability. With DxEnterprise from DH2i, Asante has unprecedented flexibility to spin up services quickly and

manage them more efficiently, and all without further SQL Server and OS sprawl. What's more, Asante is saving hundreds of thousands of dollars in hardware, software licensing, and support costs—money that can be better applied to services that can positively impact patients' lives.

Virtualization can't solve SQL Server sprawl

In the mid-2000s, Asante began virtualizing much of its datacenter in order to consolidate, improve mobility, and achieve higher availability for business-critical applications, as well as gain better use of IT resources and engineering time. York's team started with smaller projects and low-hanging fruit, and gradually virtualized as much of the datacenter as made sense. "We had to find ways to keep operating costs down," York said. "So we virtualized whatever we could to get rid of the ongoing lifecycle issues around refreshing hardware every four to five years with physical servers. We were pretty happy with the approach and saw a lot of wins. But there were still workloads we couldn't collapse."

More and more often, those workloads were SQL Server applications that required multiple servers for high availability and were frequently too large to be virtualized. "Because these applications were critical for the business, vendors were building clusters and large, over-the-top SQL Servers with

Cost Savings

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Safely Stack Instances

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—Michael York

lots of redundancy and high availability," York explained. "Before we started consolidating, we probably had 250 to 300 line-of-business applications, which led to an explosion of physical and virtual SQL Servers throughout the organization. Ultimately, we had to deal with SQL Server sprawl."



Asante Center for Outpatient Health, Grants Pass, OR

Projects coming into the organization continued to increase in size and complexity, with multiple servers for databases and applications as well as web and interface servers. York wanted to virtualize these systems using an application-focused approach, rather than spinning up large hardware projects with multiple hypervisor nodes and related overhead, but he needed a way to do that for I/O-intensive SQL Server workloads. "We had two types of problems," York said. "One was small to mid-size databases coming in with their own overbuilt solutions. Then at the other end of the scale we had these very large databases doing a lot of transactions. Even though not all of these were processing at 100 percent, the vendor's philosophy was that we needed the biggest and best for future growth and high availability. That meant large clusters of servers, and we've had nothing but headaches with Microsoft clusters. The problem is that clusters are meant to protect hardware, but if a software piece fails and the other pieces don't know about it, the system still fails."

Ultimately, if there's any way we can avoid using Microsoft clusters, we will."

The light bulb went on with discovery of DH2i's HA software

York knew it wasn't worthwhile to try to make all the special provisions needed for SQL Server to exist within VMware. "It often comes down to I/O contention," he explained, "and then you're dedicating a costly ESX host or two for running SQL workloads. With SQL Server's I/O profiles, we were either wasting too much space in the wrong kind of storage or putting too much I/O workload into a VM. We didn't want to get into building specialized VM farms."

Consolidation

Asante has been able to consolidate 15 to 20 instances per server.

York looked for an approach that would let his team break apart vendor-recommended solutions similarly to what they were doing with VMware, but that would provide a viable alternative to clusters for SQL Server applications. When York discovered DxEnterprise, the light bulb went on. "Early on, we didn't know what we didn't know," he

stated wryly. "We didn't understand that we could scale back and use SQL Server better by safely stacking instances on the same box to get more out of our hardware."

Asante's early experience with instance-level management was with HP's PolyServe, which was a conceptual precursor to DH2i's DxEnterprise. That experience made York eager to implement the more advanced capabilities and tools offered by DxEnterprise. The team looked for low-hanging fruit to target with the new technology first—a similar approach to what it took with virtualization. That included applications that were data-mining multiple SQL Servers running on disparate servers that they could collapse into a better framework for high availability. As the engineering staff saw the possibilities, they looked for more candidates to run as instances and discovered that management with DxEnterprise was applicable across the datacenter. Other than limited situations that require applications to run in a separate VM (such as those with strict vendor requirements or FDA solutions), Asante has been able to consolidate 15 to 20 instances per server.

"DxEnterprise does a much better job of running high-end workloads right where you need them, and with all the management capabilities built in," York continued. "We can place a database in SQL Server on

DxEnterprise and immediately have high availability for our internal customers. The built-in DxEnterprise tools make step-and-repeat on a larger scale a whole lot easier than anything else we've used, plus it puts the workload right next to the disk where it needs to be and not separated by virtualization layers." Not only did DxEnterprise offer dramatic improvements in consolidation and availability, York and his team were also happy to ease management and to reduce operational and lifecycle headaches such as patching. "DxEnterprise got rid of those headaches," York said. "For a small shop like us, that was a huge win."

Integration Issues

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-Michael York

Simplified Management

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Multiple environmental advantages; significant cost savings

When York started with DH2i's software, the goal was to spin up services more quickly, to manage them more efficiently, and to reduce SQL Server sprawl. He needed an agile infrastructure that would allow him to provision and scale up servers as quickly as possible. But he soon learned that DH2i's approach offered an additional advantage: a disaster recovery solution with easy multi-subnet failover for his multiple locations that he can implement at any time, on any infrastructure, and manage as an extension of what he's already doing. "This is the easiest way to do stretched SQL clusters," York said.

And while all those advantages are important, York says the challenges today are different. "Three years ago, we didn't care as much about SQL licensing costs. It was just the price of running SQL Server within the organization. But when SQL Server had a CPU-based licensing model, it was four times cheaper than it is today, so we just bought a SQL Server license, put it on the biggest server we could, and charged it back to the project. We didn't think about how that was snow-balling. When licensing changed to a core-based model, we realized we were going to have to pay over \$400,000 this year to true-up our existing licensing model if we

didn't consolidate. With DxEnterprise, we consolidated to the point that we only had to pay about \$20,000 in true-up costs."

Asante is also saving the monthly cost for Enterprise Agreement support, which increases incrementally as a percentage of licensing costs and comes up for renewal every two years. And because individual departments don't see those recurring SQL Server costs, that's a substantial saving for IT.

Immediate Impact

"Today, if I build two physical SQL Enterprise servers, I've already saved money by building one with DxEnterprise, to the tune of hundreds of thousands of dollars in fixed and recurring SQL Server costs."

-Michael York

Disaster Recovery

Another reason to love DH2i's software: it provides a disaster recovery solution with easy multi-subnet failover that can be implemented at any time, on any infrastructure.



Asante Women's Center, Grants Pass, OR

York stated flatly, "You're not doing anything for your bottom line by running SQL Server in VMware. Today, if I build two physical SQL Enterprise servers, I've already saved money by building one with DxEnterprise, to the tune of hundreds of thousands of dollars in fixed and recurring SQL Server costs."

York has realized that many of his colleagues don't know they have new options with solutions like DxEnterprise. "I was at a class recently on a completely different topic and ended up talking to another engineer about SQL Server hosting scenarios," he recounted. "At that moment I realized how much others pay with SQL Server sprawl. I'm excited that we're saving money and it's an easy thing to talk about to other professionals in the industry."

Like many IT organizations, York needs both technical and budget flexibility to deliver infrastructure and spin up new services quickly and effectively. In Asante's case, new IT initiatives are allowing the health

system to offer electronic medical record (EMR) services to hospitals outside of Asante's network, opening up new revenue and business opportunities. In the eat-or-be-eaten healthcare industry, York is positioning Asante to eat—and clustering with DxEnterprise is helping him do that.

Bottom Line

"You're not doing anything for your bottom line by running SQL Server in VMware."

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DxEnterprise Benefits Summary

- Saved hundreds of thousands of dollars in licensing costs
- Massive improvements in consolidation and availability
- Alleviated management stress and reduced operational and life-cycle complications like patching
- Gained disaster recovery solutions with easy multi-subnet failover for multiple locations
- Created new revenue source: offering electronic medical record services to hospitals outside of Asante's network

