



Commonwealth of Pennsylvania Opens for Business Online with a Clustered Dell Server/SAN Platform on Microsoft Windows 2000 Datacenter Server and BizTalk 2000

SOLUTION OVERVIEW

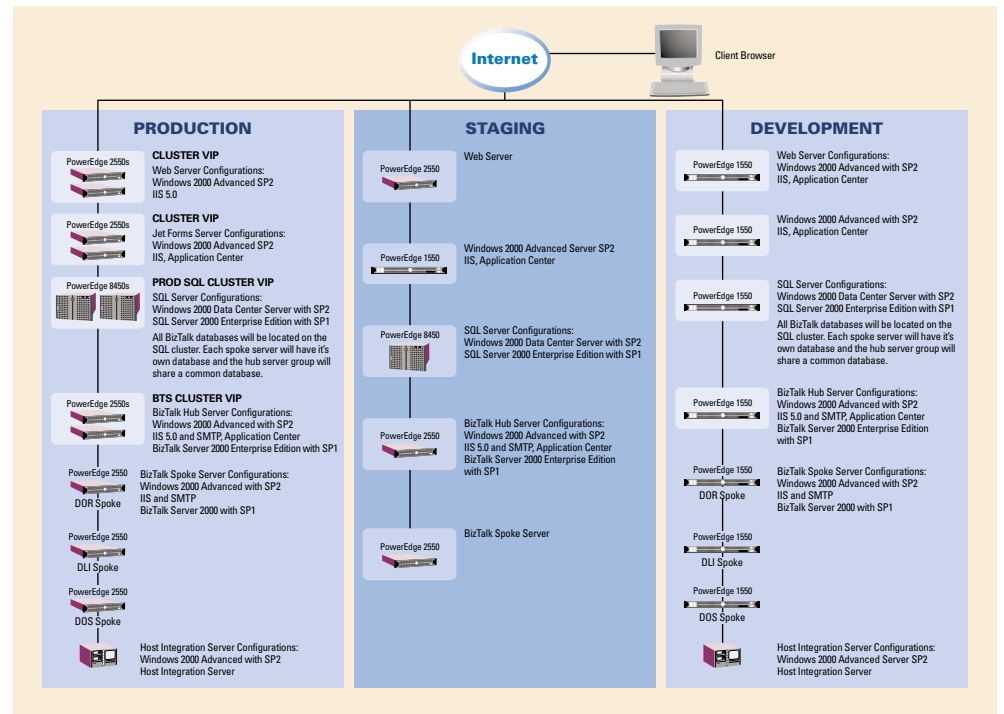
Challenge

Design a hardware infrastructure for the new "Pennsylvania Open for Business" portal that would deliver rock-solid reliability to millions of visitors.

Solution

Build the site on a two-node, eight-way Dell™ PowerEdge™ 8450 cluster attached to a 1.2TB Dell PowerVault Storage Area Network (SAN) and running Microsoft® software. The servers have received 19 million hits in just four months, delivering 100 percent uptime and sub-second response times.

A new economic development initiative in Pennsylvania is the "Pennsylvania Open for Business" (PA04B) portal, which allows businesses to electronically register online with multiple state agencies. PA04B reduces a weeks-long process down to a couple of days and helps eliminate confusion and expense for business owners. The site has been wildly successful, garnering 37.5 million hits in just nine months, bringing in 18,000 business registrations, and making government services more accessible. This enterprise application runs on a two-node Dell PowerEdge 8450 cluster supported by a Dell PowerVault™ Storage Area Network. Key software is Windows® 2000 Datacenter Server, Microsoft BizTalk™ Server 2000, Microsoft SQL Server™ 2000, and Microsoft Internet Information Services Server.



When Pennsylvania's E-Government initiative was started, the goal was to make the Commonwealth the easiest state in the nation to do business with. The Governor pushed the state's technologists to make Pennsylvania a model in B2G (business-to-government), providing friction-free services to prospective business residents. One of the most visible fruits of this effort is the www.paopen4business.state.pa.us (PA04B) portal, which allows new businesses to identify, complete, and submit at one time all registration data required by three different state agencies.



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*Marty Rupert
Project Manager
Pennsylvania Open for Business*

Pennsylvania’s Office of Information Technology selected the Microsoft Windows 2000 Datacenter Server operating system and Microsoft .NET Enterprise Server software as the foundation for building the application, and Dell PowerEdge servers and PowerVault Storage Area Network (SAN) solutions to power it.

Simplifying B2G

Pennsylvania Open for Business is all about simplifying and accelerating business’ interactions with state agencies. Previously, getting a business registered in the Commonwealth of Pennsylvania required filling out many duplicate forms with information that crossed several state agencies, tracking down answers through telephone calls or visits to state offices, and even spending money on lawyers and accountants to help navigate the bureaucracy. The whole process could take weeks and generated a lot of frustration for new business residents.

All that changed with PA04B. “We now use this portal to make the Commonwealth work for the users,” says Marty Rupert, project manager for PA Open for Business, in the state’s Office of Information Technology (OIT). The portal provides a single online location where a business can interact with the Commonwealth of Pennsylvania, explains Rupert. “This portal removes a lot of the work of registering a business in the state. It provides 24x7 access that allows companies in the Commonwealth and across the nation to connect with us any time and also makes us accessible to individuals after working hours. More than half our traffic to date happens during non-traditional hours.”

Since it went live in early September 2001, to date, PA04B has received 37.5 million hits and recorded more than 18,000 business registrations – reinforcing Pennsylvania’s focus on business and economic development.

Dell Servers: Always Open for Business

The state had already selected Microsoft Windows 2000 Datacenter Server software for its PA04B infrastructure because of its failover support for clustered servers, and it wanted a hardware platform that offered rock-solid reliability. “The site had to be robust above all,” Rupert says. “It would look pretty bad to have an ‘open for business’ site not be open for business. Also, it’s a pet project of our governor, and availability was paramount.” The OIT staff expected several hundred thousand hits over the first several months of business. But they knew this would grow and wanted sufficient scalability to accommodate that growth.

The state selected an all-Dell platform to power its critical welcome mat to the business world. Dell platforms demonstrated excellent compatibility with Microsoft data center applications. The Dell servers had robust failover capability and have demonstrated ample availability in business-critical environments.

The state had also had excellent experience with Dell’s customer support team and knew that “If anything went wrong, all we had to do was make a phone call, and they would be there,” Rupert says. Dell has a local team that has worked with multiple Commonwealth agencies since 1997. Dell and Microsoft had previously worked together to install Microsoft Exchange on 45,000 clients on Dell desktops throughout the state, as well as implementing application servers in the Office of Administration. The local Dell sales team worked closely with Steven Halliwell, Microsoft project manager for PA04B, to determine the site’s availability and scalability needs, and recommended a cluster of PowerEdge 8450 servers with a PowerVault Storage Area Network.



The PA04B site runs on:

- **Dell PowerEdge 8450s.** The Open for Business Datacenter cluster consists of two Dell PowerEdge 8450 servers, each with eight 700 MHz processors using a cLAN Giganet interconnect. The Microsoft BizTalk 2000 cluster also consists of two identically configured PowerEdge 8450 servers with 8GB of memory and eight processors. The BizTalk cluster is based on Network Load Balancing, while Microsoft Cluster Services are utilized in the Datacenter SQL cluster.
- **Dell PowerVault SAN.** The shared storage environment for the Microsoft Datacenter SQL Cluster that is at the heart of the Open for Business solution is based on Dell's PowerVault 650 with approximately 1.2TB of storage capacity.

"The PowerVault SAN has given the Commonwealth excellent performance and reliability, while enabling us to scale our storage capacity to meet demand," Microsoft's Halliwell says. "We are also using the SAN for quickly backing up critical data to tape without impacting users during the backup window."

Working together, the Dell, Microsoft, and OIT teams built the PA04B interactive site in just six months. OIT realized that through a scheduling glitch, the site was slated to go live on Labor Day, and they had failed to schedule an installation. They called Dell on Friday, and the site was up, tested, and running flawlessly by Tuesday. "Dell flew in engineers from all over the country to meet our deadline. I was very impressed with their follow-up and service," Rupert says.

In addition to taking advantage of Dell's installation and consulting services, the Commonwealth purchased Dell Gold Support services. This three-year contract gives the Commonwealth same-day response for the Microsoft Datacenter Server operating system by a joint Dell-Microsoft support team.

The site was deluged with 19 million hits in the first four months – all generated by word-of-mouth advertising. "The Dell servers didn't budge," Rupert says. "An average of 131,000 page-views per day didn't even tax them. The busiest day ever was 1,422,000 views without a hiccup. That gives us unbelievable peace of mind."

A Showcase Microsoft BizTalk Application

Visitors log on to PA04B and participate in an interactive interview that intelligently determines what information they need to submit, organizes it in the format the various agencies require, submits it, and preserves confidentiality. Depending on the individual's answers, logic within the BizTalk application determines which data is sent to the Commonwealth's Department of Revenue, Department of State, and Department of Labor and Industry.

Once entered, the data is converted to XML format and distributed to the appropriate department by way of a BizTalk map that leverages a hub-and-spoke server architecture to support direct agency-to-agency communication. Registrants' data is then reformatted so that each department can accept and process it, whether its internal applications are running on a mainframe, a mid-range computer, or an Intel Architecture server.

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Microsoft Windows 2000 Datacenter Server is the stable bedrock that supports the complex BizTalk functions. Windows 2000 Datacenter Server is designed especially for large-scale, high-reliability, mission-critical applications that must provide continuous scaling and availability. Windows 2000 Datacenter Server provides failover support in clustered environments, expanded physical memory for large applications, reduced latency in SAN environments, and sophisticated server resource management.

One of the most important data-management features of the portal's BizTalk map is that each agency is only allowed access to the data that it is legally authorized to see. Other services offered on the site include:

- Electronic signature to satisfy signature requirements for electronic transactions
- Electronic payment of registration fees using credit cards
- Online searchable database to check availability of business names
- Workers' compensation insurance information collection
- Online briefcase to store forms and continue the interview process at a later time
- Ability to print forms at end of interview process

The number of visitors to PA04B continues to climb, and the Dell PowerEdge servers have not even broken a sweat. In fact, Rupert will be sharing some of this massive server resource with other applications needing similar availability and power. "We're redesigning the Open for Business site now to make it even faster and easier to use," he says. "The Dell servers give us an amazing processing and storage resource that allows us to be open for business around the clock."



Microsoft



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