

# HP BladeSystem increases availability and saves money for Huntington County

An HP BladeSystem c3000 Enclosure and virtualization deliver higher performance, greater scalability and uptime, and up to \$40,000 in cost avoidance



## Huntington County, Indiana

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J. Ryan Wall, Associate Information Systems Director, Huntington County

HP customer case study: server virtualization, adaptive infrastructure

Industry: government

### Objective

Replace aging servers with more dependable models; avoid replacing near-capacity UPS

### Approach

Provide compact server and storage system using HP BladeSystem c3000, enable virtualization for greater flexibility, and reduce strain on power supply

### IT improvements

- 16 physical servers replaced with 3 server blades hosting 23 virtual machines
- 15-point gain in power capacity (UPS utilization at 65–70 percent vs. 80–85 percent)
- Easier, more frequent and flexible test environment due to virtualization
- 75 percent improvement in application testing accuracy
- 18-fold faster server provisioning (10 minutes vs. 3 hours)

### Business outcomes

- \$35,000 to \$40,000 cost avoidance by not needing new UPS and major rewiring
- 6–8 hours of IT staff time saved per month
- Faster processing reported by users
- 3 hours unplanned and 6 hours planned downtime eliminated per month
- Data backup at 100 percent, up from 65 percent

### Amber waves of grain

Huntington County, Indiana, is a farming community, where fields of wheat, corn, and soybeans dominate the landscape. The city of Huntington is the county seat and serves as a bedroom community for commuters to nearby Fort Wayne. The city and county governments share offices and resources, and together have about 400 computer users, supported by an IT staff of only three.

Those three have their work cut out for them. The city and county depend on the county’s network for a wide variety of systems, most importantly 911 response management through two call centers, a water plant, a sewage plant, and even a landfill. Keeping these functions up and running is essential. That was becoming more and more of a challenge as Huntington’s servers began to age, and its 1980s-vintage uninterruptible power supply (UPS) began nearing maximum capacity.

So in spring 2008, Huntington retired its 16 aging servers and installed the HP BladeSystem c3000 Enclosure, aka “Shorty”, containing five HP ProLiant BL460c G1 server blades. The change was part of a move to replace much of the county’s infrastructure, including switches, storage, and printers with HP equipment. Using VMware, Huntington County can host 23 or more virtual machines (VMs) on three server blades. “What made the c3000 so appealing is that we could replace our 16 servers with a single box that is better, more power efficient, and requires less cooling, which is always an issue in our data center. It allowed us to get more bang for our buck,” says J. Ryan Wall, Huntington County associate information systems director.

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J. Ryan Wall, Associate Information Systems Director, Huntington County



The new blades make a big difference, given the challenges Huntington County’s IT department deals with on a daily basis, he adds. “Having the city involved in our department adds a layer of complexity most county IT departments don’t have to deal with,” he says. “We have 14 buildings, two 911 call centers, a water plant, a sewage plant, and a landfill that all tie back to us and use our data center. Some need 24/7 availability. The HP StorageWorks 4400 Enterprise Virtual Array and the HP BladeSystem c3000 Enclosure have really helped a lot in meeting those needs.”

#### **Powering down**

The change immediately eased the strain on Huntington’s Liebert UPS device. “Before the c3000, with all our servers up and running, we were 80 or 85 percent of maximum utilization,” says Wall. “Once we had the BladeSystem online, we saw a drastic decrease in power utilization. We dropped that 85 percent to about 70 percent during the day. At night, it drops into the high 60s.”

That’s made a big difference to Huntington County’s budget, because replacing the UPS is an expensive proposition. Wall reports that when another Indiana county recently replaced its Liebert UPS, the price tag was around \$30,000. And Huntington would also need rewiring, because the existing Liebert runs on a single-phase power system. Wall estimates that all this would add up to a total of \$35,000 to \$40,000.

Although the Liebert dates back to the 1990s and will need replacing in the next few years, Wall notes that “The c3000 gives us some more time to plan for it and budget it out, instead of having to replace it on an urgent basis,” he says.

#### **‘Hey, what’s going on?’**

Switching to the HP BladeSystem also brought performance benefits that users noticed right away. “They said, ‘Hey, what’s going on? Our reports are running a lot faster! Did you guys do something?’” Wall recalls.

Huntington’s applications are also running with less downtime. “Earlier I’d have to reboot the e-mail server nearly every week, because it would get bogged down,” Wall says. “It would take 15 minutes to come back up.” During that time, Wall would bear the brunt of users’ frustration as they got cut off from e-mail. Now it takes less than five minutes to reboot the e-mail server, and users often don’t even notice it’s been down.

Those outages added up to about three hours of unplanned downtime every month—downtime which has been virtually eliminated according to Wall. Downtime due to server failure has been eliminated as well because the server blades are configured in a cluster using VMware technology. Wall notes, “If one fails, it rolls over to the others. Hardware-related unplanned downtime is a thing of the past.”

## About Huntington County

Huntington, Indiana, is the county seat for Huntington County ([www.huntington.in.us](http://www.huntington.in.us)), a rural county of corn, wheat, and soybean farms that also serves as a bedroom community for commuters to nearby Fort Wayne. The county government, including 911 services, has about 400 computer users, supported by an IT staff of only three.

About 6 to 8 hours of planned downtime each month have been eliminated as well, thanks to the servers' clustered configuration, and any maintenance is opaque to the end users. "Most of my production applications are virtualized and can be managed using the VMotion feature of VMware, so I can run the application on one of the other servers," Wall explains. "Rebooting a server, if needed, is so quick that it's not noticeable to end users."

### Weekends with the family

At home, Wall's wife and children have likely noticed a difference. Before deploying the BladeSystem c3000 Enclosure and VMware, Wall used to spend one weekend day a month—about 6 to 8 hours—at the office, doing system maintenance and taking the servers offline outside office hours. Now he almost never goes in on weekends, partly because the new servers are more reliable and need less maintenance, partly because it's possible to do routine maintenance without taking the whole system down, and partly because HP remote management tools allow him to perform needed tasks from home.

"If I run into a problem with the c3000, I can access the system by VPN (virtual private network) and it's as though I were sitting there in front of it—I don't have to leave my family and go down there at night. Being able to use HP Integrated Lights Out (iLO) 2 has been really helpful," Wall says.

Even in the office, says Wall, "We use HP iLO for everything. I can do it all from my desk and that's made us much more efficient. Earlier I would have to physically touch the server at least once a day before starting to use HP remote management, but now I only do so every two weeks or so."

## Customer solution at a glance

### Hardware

- HP BladeSystem c3000 Enclosure
- HP ProLiant BL460c G1 server blades
- HP StorageWorks 4400 Enterprise Virtual Array
- HP StorageWorks MSL4048 Tape Library

### Software

- HP Integrated Lights-Out 2 (iLO 2)
- HP Onboard Administrator
- HP Systems Insight Manager
- VMware Infrastructure 3
- Microsoft® Windows® Server 2003 operating system
- Microsoft Exchange Server 2007

### Operating system

- VMware ESX 3

### Network protocol

- Gigabit Ethernet

### Services from HP

- HP Support Plus 24
- HP Factory Express
- HP Deployment

### Testing, testing

Another huge advantage to virtualization is how easy it is to create and provision a server—10 minutes with VMware, compared with 3 hours before, according to Wall. The ease of creating virtual machines means Wall and his colleagues can now conduct testing about five times a year, compared to once a year or less before. And without a virtualized test environment they had to use whatever they could find as a test lab, such as an out-of-use desktop computer. “Now by cloning images of production servers, we can recreate the actual environment and testing is about 75 percent more accurate,” Wall adds.

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J. Ryan Wall, Huntington County Associate Information Systems Director

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Backup is another area where Huntington has gained efficiency. With the servers now backing up to an HP StorageWorks 4400 Enterprise Virtual Array, Wall can back up 100 percent of the data between Friday night and Saturday afternoon. Before, in order to stay within the backup window, Huntington was able to back up only about 65 percent of its data.

And the products came with valuable HP services, both Factory Express, which configured the c3000, and Deployment Services, which helped cut implementation time for the project from three weeks to one week. “Using the services is one of the best things we’ve done—it made it so much easier to get up and running,” Wall notes.

Another benefit is how well VMware on the HP BladeSystem integrates with the county’s HP StorageWorks 4400 Enterprise Virtual Array. “Virtualized servers and storage together have maximized utilization and consolidation and reduced our management costs,” Wall says. “That’s made things better for the long term—it’s allowed us to turn our attention to other IT challenges.”



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