



Indiana University Accelerates IT Service Delivery Through Server and Storage Virtualization

Intel® Xeon® processor-based servers and a Compellent Storage Center SAN help a key department streamline its infrastructure and operations.

Indiana University prides itself on being one of the most wired universities in the U.S. and is committed to staying at the forefront of IT solutions and service delivery. That commitment extends to the Auxiliary Services and Programs Department, which oversees a wide range of nonacademic programs for the eight-campus university, including residence halls, transportation, document services, and much more.

Unlike most departments at the university, Auxiliary Services and Programs is not funded by grants. According to Janssen Jones, Associate IT Director for the department, "We support our own operations, so containing costs is as important as delivering high quality services."

"We're doing a lot more than we ever could have before—and we're doing it much faster."

— **Janssen Jones**, Associate IT Director for Indiana University's Auxiliary Services and Programs Department

BENEFITS REALIZED

- 12-to-1 server consolidation
- Faster application performance
- Dramatic reductions in planning and management overhead
- New servers deployed in less than 10 minutes
- SAN performance/utilization automatically optimized

STREAMLINING INFRASTRUCTURE WHILE ACCELERATING PERFORMANCE

A few years ago, Janssen and his organization saw a major opportunity to transform their operations by virtualizing their server and storage infrastructure. “We had about 150 servers,” says Jones. “Each one had direct attached storage and was running a single application.” With that approach, it typically cost the department \$10,000.00 to \$20,000.00 in production and backup hardware to launch a new application; and it could easily take over a month to spec, purchase, install, and provision the new servers.

After considering alternatives, Janssen and his team deployed new Intel Xeon processor-based servers and a 30 terabyte Compellent Storage Center SAN, which is also powered by Intel Xeon processors. According to Jones, “We were going to start slowly with virtualization, but the benefits were too good to resist. With the new quad-core processors and the high-speed SAN, our applications actually run faster when we migrate them into virtual machines—some of them by two or three times.”

The team is now running 105 virtual machines on just 12 server blades, and continues to consolidate older systems. Despite rapid growth, the department’s data center footprint has gone from five server racks to three, and will eventually shrink to two. Since they rent space in the university data center, that consolidation represents hard savings.

“MIND BLOWING” REDUCTIONS IN MANAGEMENT OVERHEAD

Gains in operational efficiency have been equally impressive. The department had purchased a SAN from another vendor in 2000, but complexity had been a real problem. Since the Compellent SAN is based on Intel® Architecture, it not only delivers higher performance and capacity at lower cost than proprietary systems, but also provides the extra processing power needed to support Compellent’s powerful management suite.

Jones has been thrilled with the management interface. “My concerns over complexity are gone. The tools are easy to use, and I don’t have to spend hours architecting the solution and managing data, because those functions are almost entirely automated.” Three features have been especially valuable to Jones and his team.

- **Thin Provisioning**—The Compellent SAN allows administrators to allocate any amount of storage capacity per server, but only consumes physical resources when data is actually written. This can cut total disk requirements in half. Says Jones, “I used to overprovision every server. That meant paying for extra capacity before I needed it, and I’d still end up manually reconfiguring storage within a year. Now I just set up a volume and let the SAN do its thing. The time savings are huge.”

- **Automated Tiered Storage**—The Compellent SAN continuously monitors storage access patterns, then intelligently classifies and migrates blocks of data between high-speed Fibre Channel drives and inexpensive SATA drives. The department currently has about 80 percent of its data residing on the less costly drives, which saves money and optimizes performance—automatically.

- **Intuitive Interface and Command Utility**—Jones loves the ease-of-use of the Compellent management interface. He’s equally pleased with the command utility, which he uses to additionally automate his most frequent procedures. “When I need to, scripts are easy to write and deploy. Now I can set up a new virtual server in less than 10 minutes, and reboot one in about 25 seconds. That kind of speed is mind blowing.”

These are important advantages for this hard-working IT organization, and Jones sees more value ahead. “We have a lot of room for growth. I’m guessing we won’t have to buy new servers or storage capacity for at least a year, maybe two. Most importantly, we’re doing a lot more than we ever could have before—and we’re doing it much faster. This has been a great investment for us.”

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