



Baltimore Library's Digitization Project Gets Speed Boost from BlueArc's Titan

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"We were receiving complaints on the responsiveness of the storage we had prior to BlueArc and we had to do something about that. We knew there was a problem."

**- Michael Walsh,
Manager of Systems,
Enoch Pratt Free Library**

Summary

Baltimore's Enoch Pratt Free Library, one of the oldest free public library systems in the United States, is extending their offerings well beyond books, working to digitize their collections and provide them to customers through the Internet. To centralize this fast-growing archive, as well as providing available capacity for shared storage, the library turned to BlueArc's Titan in an effort to provide highest performance and capacity – improving the customer experience and enabling the consolidation of nearly 40 individual servers.

The Background

The Enoch Pratt Free Library acts both as the public library for the city of Baltimore, Maryland, and the Maryland's State's Library Resource Center – operating a statewide public network called Sailor, which links all of the libraries in Maryland, constituting hundreds of branches offering tens of millions of books. Enoch Pratt also serves school systems, county school systems and local governments throughout the state.

With a metro area network consisting of five dual fiber rings running at gigabit speeds, Enoch Pratt has one of the most-modern library infrastructures in the country. Enoch Pratt also manages Sailor, a high speed network which spans the State of Maryland, with connection speeds reaching 200 mbps. Enoch Pratt is actively working to digitize historical and contemporary collections, extending the material's reach to anyone with an Internet connection.

The Challenge

At Enoch Pratt Free Library, customers accessing the library's data collections around the clock would sometimes see slow responses, as requests would be routed through one of the nearly 60 servers on site, without the data being centralized. In parallel, users creating digitized files were seeing delays from the existing storage, which added minutes to simple tasks, including the copying and management of files in the range from 10 to 20 megabytes apiece. As users will often design multiple copies of these files, for high, medium and low-resolution display, first operating on the highest-resolution files, and reducing quality to reduce file sizes, delays were a significant impact to productivity.

A new storage architecture was needed that could cope with the growing terabytes of data, and deliver performance to eliminate delays.

The Solution

To centralize storage resources while delivering uncompromising performance and capacity to enable continued database growth, Enoch Pratt deployed a pair of Titan storage systems, initially equipped with six terabytes of high performance Fibre Channel storage each. One of the devices was installed at the library's main branch, while the second, for disaster recovery purposes, was to

be installed in an alternate location. Titan was selected over competitive offerings after displaying performance well above expectations, as internal tests were unable to reach the product's speed ceiling. The deployment of Titan centralizes the library's database storage, and will enable the consolidation of storage while decommissioning nearly 40 individual servers.

The Results

The combination of a fast MAN, a speedy statewide WAN and the Titan storage system moves Pratt to the goal of rapidly delivering the maximum available content to customers throughout Maryland. By deploying Titan as the library's centralized network storage solution, Enoch Pratt Free Library has implemented a system that can best utilize that backbone, through the high-speed retrieval and transmission of data, while enabling massive server consolidation.

With hundreds of users simultaneously accessing the centralized database to create data, and thousands of search requests hitting that same database to find data each day, storage performance was crucial to Enoch Pratt's delivering on their mission. Through a rigorous evaluation process, the library looked at several leading network storage vendors, and put the systems through their paces. Enoch Pratt simulated peak database demands that would parallel anticipated data creation and retrieval activity – the primary application which would impact the machines – were they to be placed in production. Unlike other vendors, who reached their capacity during the test, BlueArc's Titan displayed no limit to its potential.

"The engineers that work for me are usually kind of quiet, but when they got the BlueArc, they got really excited," said Michael Walsh, Manager of Systems for Enoch Pratt Free Library. "They threw everything they could at the Titan and it still wanted more. It was more than double the speed of anything else we tested in our environment. We couldn't even measure how good Titan was, because we never got to the point that we killed it."

For Enoch Pratt, the margin at which BlueArc trumped the competition on performance was a relief to ongoing speed issues that had plagued the previous environment and impacted the customer experience. Walsh said that on the existing infrastructure, complaints regarding the slow responsiveness of storage were commonplace, as it would take minutes to edit, retrieve and store multi-megabyte files. The library also was looking to avoid continued server proliferation – which had ballooned to nearly 60 unique devices. Instead, Titan offered the ability to increase capacity simply through expanding storage – as well as the option to deliver multiple tiers of storage, whether Fibre Channel drives for highest performance, or Serial ATA for highest capacity, without demanding separate systems.

Following the successful evaluation, Titan was deployed at the center of Enoch Pratt's infrastructure, and users recognized immediate benefits. Users were able to utilize existing drive maps and shortcuts, while the system was dramatically more responsive than the library's pre-existing solution, reducing wait times and eliminating complaints. Additionally, with Titan installed, Enoch Pratt has set the storage foundation for future enhancements to the digitization process, as the library is now looking to drive toward a more data-capture driven workflow, through scanning, reducing manual effort.

As Walsh says, by working in the business of information creation and distribution, there is no limit to the scope of future storage growth.

"Because we are librarians, and we serve librarians, we tend to store a lot of data," Walsh said. "Books are just part of the information flow these days. Collection, storage and digitization of storage takes up a lot of space."

The Conclusion

The world's massive demand for rapid access to information is growing unabated. Baltimore's Enoch Pratt Free Library is leading the charge through digitizing data from its vast collection of material and presenting it, through the Internet, to customers throughout the City of Baltimore and the state of Maryland. With BlueArc's Titan storage systems as part of the company's technology backbone, the library is best suited to deliver the highest quality experience to both its users and customers through reduced wait times and an expanded data set. Additionally, Titan has enabled the library to dramatically consolidate servers while in parallel preparing for the development of new applications that further accelerate growth.



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