

PRESERVING THE PAST FOR YEARS TO COME



CyArk is a 501(c)(3) nonprofit organization dedicated to protecting the history of cultural heritage sites through advanced digital scanning, modeling and photography techniques. Since 2003, the organization has modeled a number of locations, including Mt. Rushmore, Pompeii and the ancient Mayan city of Tikal. In order to ensure the world's cultural heritage is preserved for generations to come, CyArk worked with Iron Mountain, Crossroads Systems and Spectra Logic to implement a comprehensive data protection, management and archiving solution.



CHALLENGE

Ensure the data used to document world heritage sites remains safe, secure and available for future generations

SOLUTION

Innovative technologies and services from Iron Mountain, Crossroads Systems and Spectra Logic

VALUE

- Manage growing data volumes in a secure, cost-efficient manner
- Protect mankind's cultural heritage
- Focus more time and resources on mission goals



OVERCOME THE DATA DELUGE

Unlike the artifacts safely housed in museums, the world's cultural heritage sites face constant risk from numerous factors, including prolonged exposure to sun, wind and rain, earthquakes, fires and even acts of human aggression. The potential for these locations to be irrevocably damaged threatens to leave future generations without an accurate, complete record of mankind's history.

And it is for this reason that CyArk was founded in 2003. Since its inception, the organization has employed laser scanning, high-resolution digital photography and other state-of-the-art technologies to fulfill its mission goal of preserving humanity's heritage through the creation of fully rendered, three-dimensional models of these landmarks.

Far more detailed than even the best photograph, these models provide incredibly accurate, realistic views of every aspect of a particular site, giving them numerous applications in educational and cultural tourism settings. CyArk's model of Mt. Rushmore, for example, allows viewers to see the individual chisel marks on Teddy Roosevelt's mustache.

And while newer, advanced technologies have helped CyArk capture more facets of each site it surveys, they are also requiring the organization to manage a greater volume of data than it did in the past - upward of 5 to 10TB per project, versus 500GB just a few years ago.

With fewer than 15 employees and a nonprofit designation to uphold, handling such a significant - and growing - amount of data put an incredible strain on CyArk's staff. This also raised concerns that the organization's existing storage and archiving process, which used expensive disk drives and stored backup data inside a local bank vault, would not provide the economics or security CyArk needed to safeguard data in perpetuity and further its mission goals.

The challenge of coping with rapid, unyielding data growth, coupled with an initiative to digitally preserve 500 sites over the next five years - known internally as the "CyArk 500 Challenge" - prompted the organization to look for a new way to manage its data. CyArk needed a solution that promised to easily scale over time, effectively protect data and provide the efficiencies it needed to focus more time and energy on fulfilling its mission goals.

"We predicted that our data archive would grow by 30 percent each year for the foreseeable future, which means it would reach 1 to 2PB in five years," says Elizabeth Lee, CyArk's Director of Operations. "So we wanted a solution that was going to work not only this year and next, but had the ability to scale well into the future."

To bring these goals to life, CyArk partnered with Iron Mountain to create a comprehensive data protection, management and archiving project.

AN EFFICIENT, SECURE DATA ARCHIVE

Managing CyArk's growing stores of data and safeguarding the world's cultural heritage in the most cost-effective manner possible required a different approach to data storage - one that uses advanced tape technologies to deliver the benefits of disk drives at a much more affordable price point.

Iron Mountain saw these challenges as an opportunity to deploy a cutting-edge solution that combines the cost efficiency and longevity of tape with the Linear Tape File System (LTFS) open standard. To help make it a reality, Iron Mountain enlisted the assistance of two key technology partners: Crossroads Systems and Spectra Logic.

As the first enterprise-level archive product to deploy LTFS, Crossroads Systems StrongBox® solution is a file-based, intelligent caching appliance that enables an entire tape library to appear like a standard disk on Network Attached Storage (NAS). This makes it easy for CyArk to take raw data from the field, ingest it onto a server and automatically transfer it into the LTFS library. Likewise, StrongBox's internal caching and policy-based data management reduce latencies for data reads from tape and enable the CyArk team to recall files transparently from a standard, file-based interface.

Any data CyArk selects using the StrongBox interface is written to two high-capacity LTO-5 tapes - the first of which is stored locally in a Spectra Logic T950 library. In addition, the T950 library uses innovative management technology to continuously monitor the health of each tape and the data residing on it, enabling CyArk to ensure the ongoing integrity of its preservation efforts.

Along with coordinating the project, Iron Mountain is helping CyArk store its critical data in accordance with media management best practices. The second LTO-5 tape is designated for offsite storage and transported using Iron Mountain MediaCare™, which ensures that every tape is handled following proven security procedures. And, Iron Mountain Offsite Tape Vaulting stores this media in a secure, environmentally controlled, underground facility - far from CyArk's location near the San Andreas Fault - helping the organization feel confident in the long-term safety and accessibility of its archival data. Iron Mountain also stores a copy of the organization's weekly operational backup in a local vault, further strengthening data protection.

"One of the wonderful elements of this program was working with the Iron Mountain team to configure the solution," says Ben Kacyra, Founder and President of CyArk. "Their ability to understand our needs and identify the appropriate partners played an instrumental role in the success of the project."

"We are a small organization with data management challenges of a company several times our size. Working with Iron Mountain, Crossroads and Spectra Logic gave us an easier way to manage our data, and provided the long-term digital archive we needed to protect our current and future projects and use them to help preserve mankind's cultural history."

- Ben Kacyra, Founder and President, CyArk





THE PAST, PRESERVED

Live since September of 2012, the solution is providing CyArk with the peace of mind that the data it collects - and, by extension, the history of the world's heritage sites - will live on for years to come.

And because the new tape solution improves data protection and promises to easily scale well into the future - while making the entire process much more efficient and cost effective - CyArk can keep its staff focused on achieving mission goals, and confidently move forward with the CyArk 500 Challenge.

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ABOUT CYARK. CyArk is a 501(c)(3) nonprofit organization dedicated to digitally preserving cultural heritage sites by collecting, archiving and providing open access to data created by laser scanning, digital modeling and other state-of-the-art technologies.

ABOUT IRON MOUNTAIN. Iron Mountain Incorporated (NYSE: IRM) provides information management services that help organizations lower the costs, risks and inefficiencies of managing their physical and digital data. Founded in 1951, Iron Mountain manages billions of information assets, including backup and archival data, electronic records, document imaging, business records, secure shredding, and more, for organizations around the world. Visit the company website at www.ironmountain.com for more information.

ABOUT CROSSROADS STRONGBOX. Crossroads StrongBox is a shared storage solution purpose-built for data archiving and preservation. Using Linear Tape File System (LTFS) technology and intelligent storage architecture with standard file systems (CIFS/NFS), StrongBox empowers online, all-the-time file availability with uncompromised data protection, full data mobility, non-proprietary file storage and significant cost-savings. StrongBox unifies your archive - past and present - while providing seamless scalability and reliability for the future. For more information, visit www.crossroads.com/products/strongbox.

ABOUT SPECTRA LOGIC. At Spectra Logic we define, design and deliver innovative data protection through tape and disk-based backup, recovery and archive storage solutions. By igniting innovation we challenge expectations of the data protection market with intelligent, integrated and simple-to-use backup and archive technologies. Our goal is to develop high-density, feature-rich storage products with unmatched service and support to customers worldwide. For more information, please visit www.spectralogic.com.

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