

CASE STUDY

The Library of Congress Revolutionizes the Visitor Experience with Help from Terremark

CHALLENGE

The Library of Congress is America's oldest federal cultural institution and the largest library in the world. Its collections include more than 32 million books and other print materials, 2.9 million recordings, 12.5 million photographs, 5.3 million maps, 5.5 million pieces of sheet music, and 61 million manuscripts. And while the Library of Congress serves officially as the research arm of the U.S. Congress, its goal is to make its resources available and useful to the American people and preserve a universal collection of knowledge and creativity for future generations.

As the Library began looking for ways to manage growing visitor volume and deliver an outstanding experience, it became clear that interactive technology and the Library's Web site would play critical roles in meeting these needs.

DEFINING A NEXT-GENERATION VISITOR EXPERIENCE

While the Library of Congress is home to significant historical materials and artifacts, it does not function like a museum. Instead of simply putting rare, fragile artifacts on display, the Library team wanted to create a window into the Library and into the creative processes that result in knowledge. For example, the Library houses the original handwritten rough draft of the Declaration of Independence, which shows words crossed out, substitutions, and new ideas—tracing the authors' actual thought processes that resulted in the final draft. The only way to allow millions of people to actually experience the Declaration of Independence's evolution to its final form, while protecting the original documents, would be to make it available online.

The solution that emerged is the Library of Congress Experience at www.myloc.gov. Based on interactive, on-site kiosks that enable visitors to interact virtually with three-dimensional models of artifacts and documents, it also includes a companion Web site that replicates the on-site visitor experience.

Developing the project and ensuring continuous availability of the interactive experiences, a richly-interactive Web site, and the links between them for millions of users made this project exceptionally challenging. The Library of Congress Experience team decided to look outside of the organization for help. Microsoft, Portal Solutions, and other technology partners provided the software and expertise for the interactive kiosks and content management system. To make the entire new interactive experience available online, the Library chose Terremark to provide a fully managed infrastructure for the site.

"Terremark provided an unusual combination of hosting expertise and a global experience" said Robert Sokol, program manager of the Library of Congress Experience. "The company's international reach is important because many of our collections and constituency are international, and 60 percent of our materials are in languages other than English. We are pleased that the company can securely manage four to five million accounts and hundreds of millions of page views per year."

ACCELERATING DELIVERY OF A WORLD-CLASS SITE

Initially the Library's requirements for its Web site specified hosting, intrusion prevention, and firewall services. However, Terremark quickly identified additional requirements:

- Access to significant and diverse Internet connectivity for sustaining extraordinary traffic volumes from visitors around the world
- High performance for delivering interactive content to visitors worldwide
- 100-percent service level agreements (SLAs) for power, connectivity, and 24x7 network operations and monitoring
- Access to development and professional services expertise
- Comprehensive managed security services delivered with a 24x7 Security Operations Center
- An experienced implementation team to successfully accelerate deployment

The Library of Congress chose Terremark's Highly Managed Hosting™ service, which provides the highest levels of support and availability in the industry. Hosted in Terremark's NAP of the Americas® datacenter, the Library's hosting solution helps ensure that its site adheres to rigorous application SLAs, in addition to hardware and network uptime measures. Terremark created custom transaction monitors to measure the Library's site performance. For example, HTML monitors continuously verify that the site is up and operational. Transactional application monitors track the application's availability. Other tools are used by the Library's I.T. team to review server statistics, network statistics, and service calls.

Highly Managed Hosting includes full support and troubleshooting throughout the stack including custom application code. In order to effectively provide this service, Terremark establishes comprehensive application documentation that details which steps are required to return the Library's application to service in the event of a failure. This knowledge base accelerates incident response and problem resolution to minimize downtime in the event of issues.

The Library team is also able to make use of Terremark's digitalOps® Command Center. This innovative web-based portal provides real-time visibility into service ticketing, systems configuration data, performance trending and reporting tools and a comprehensive monitoring and availability interface. Today the Library team can see the same data and views that the Terremark staff sees in real time, increasing transparency and facilitating effective communication between Terremark and Library infrastructure and application teams.

PROVIDING MANAGEMENT SUPPORT

The Library of Congress has access to a dedicated Terremark systems engineer who is deeply familiar with the Library's site and application. As the site was launched, the Terremark team provided expert management recommendations that significantly simplified site management for the Library's I.T. team. Terremark continues to monitor usage trends and to proactively identify unusual application behavior in order to prevent potential performance issues.

NO ORDINARY HOSTING PROJECT - A MAXIMUM SECURITY POSTURE

Because the Library's hosted myloc.gov site is highly strategic, the Library decided to supplement its security protection with several new services from Terremark, such as the Managed Security Portal. This comprehensive service enables the Library team to access custom reports, track the status of all security tickets, review incident management notes, and see all of the security data that Terremark collects on their behalf.

In addition to its traditional strong firewall protection, Terremark added inline intrusion prevention devices that inspect all inbound and outbound data packets, identify malicious behavior and block threats as they occur. Terremark integrated its Managed Intrusion Detection and Prevention Service into the Security Portal for the Library project, and this capability is now being offered to all Terremark clients. The Terremark Security Operations Center (SOC) provides proactive, around-the-clock monitoring and management.

As part of the intrusion prevention services, Terremark aggregates log files from the Library's hosted myloc.gov network, security, and server devices using its Log Aggregation Service. This includes a unique ability to integrate network security scan information with "as-it-happens" log information to correlate a threat with a known vulnerability and take proactive action. The Log Aggregation and Security Information Management Service delivers comprehensive visibility across the entire security and network architecture to monitor how it is responding to security threats, and helps ensure that the SOC is mitigating real threats.

Many recent Web site attacks have taken advantage of application vulnerabilities in Web and database servers. To help prevent similar attacks on the Library's Web site, Terremark used innovative application vulnerability assessments to coordinate late-night scans, so that any vulnerability could be mitigated. Now that the site is launched, Terremark is conducting additional testing to identify any new, potential vulnerabilities.

SUCCESSFUL LAUNCH

The Library of Congress Experience opened in April 2008 allowing visitors for the first time to virtually "handle" artifacts like the Gutenberg Bible and original books from Thomas Jefferson's library. Visitors receive their Passports to Knowledge, which guide them through the exhibits and the building.

"Without Terremark, I don't think we could have done this," said Jo Ann Jenkins, Library COO. "The project scope was far outside our scope of experience, but Terremark brought it all together. Instead of being a local Washington, D.C. attraction, we have become a significant bridge between the national and international community—as well as a bridge to the future."

Thanks to Terremark Highly Managed Hosting, the Library has ensured that its hosted myloc.gov Web site will continue to support large numbers of virtual visitors, including students and teachers who use browser sessions to make their Library of Congress Experiences highly interactive and personalized. As the number of site visitors grows, the Library can be confident that its hosting platform, storage area network, security, network, and applications are operating optimally. In addition, as security threats evolve, so can the Library's protection with Terremark's security capabilities.

"The Library's skills in envisioning an innovative, feature-rich site strongly complemented Terremark's significant hosting, network and security expertise," said Jamie Dos Santos, CEO of Terremark's Federal Group. "The results are magnificent."

The Library will complete its launch of the Library of Congress Experience on December 11, 2008. By then visitors will have additional kiosks, expanded interactive access to Library treasures and collections, and expanded access to online accounts.