



Data Communications for the National Library of Medicine

AAC Manages the NLM Network Infrastructure

Background:

The National Library of Medicine (NLM) is the world's largest repository of medical information. It houses more than 9 million printed items in all areas of biomedicine, social sciences, scientific and medical technology, and the physical, life, and social sciences.

In addition to its print collections, the NLM provides an enormous range of online resources. Entrez, its life sciences search engine, integrates over 30 biomedical databases. PubMed includes more than 125 years of articles from over 4,000 medical journals. Medline Plus contains free health and drug information for patients, family, and friends.

These are some of the most heavily used web-based applications and services in the world, supporting some 900 million searches each year.

The NLM's Challenge

The dissemination of medical information is central to the mission on NLM. Today, very few patrons physically visit the Library. The vast majority access the NLM's many websites over the Internet. This makes a reliable and highly available computer network essential to NLM.

Health professionals, patients, scientists, librarians, and the general public depend on the constant availability and integrity of the NLM's online resources.

AAC's Solution

AAC's support to NLM began in 1986, but as the volume of information and activity levels grew, AAC recognized a need for a more advanced network. NLM has relied on AAC to perform research, evaluate products, recommend architecture, assist in acquisition, plan and implement programs, and provide day-to-day support for its entire data communications network.

Today, AAC has responsibility for the communications integration and support of the NLM's 800 member community and world-wide user base. Implemented as a series of successful projects since 1986, AAC's overall solution includes:

LAN/WAN: AAC designs, implements, and maintains all of NLM's local- and wide-area networks.

Remote access: The NLM staff accesses services through a Citrix portal designed and managed by AAC. Systems administrators and developers also have remote access through a secure VPN.

Systems administration: AAC manages all of NLM's file, print, and applications services, as well as its server and storage.

Messaging: AAC supports NLM users with access to Outlook® and other Microsoft Exchange®-based capabilities from their desktops and mobile devices.

Organization:

National Library of Medicine

Challenge:

Providing data and communications access to the world's largest medical library.

Solution:

Researched, architected, designed, and implemented the NLM data communications network.

Results:

An ongoing series of successful projects since 1986.



Desktop support: AAC is responsible for new desktop installations, troubleshooting, helpdesk support, remote software distribution, and recommending new configurations.

Network management and monitoring: AAC provides fault, performance, service monitoring, as well as alerting and escalation.

Consolidated co-location: AAC assisted with planning, selection, installation, security, network connectivity, and global server load balancing for an active/active alternative computing site.

Telework: AAC was instrumental in the design, implementation, and ongoing support of a Citrix-based telework solution for NLM staff to remotely perform mission-critical library, cataloging, and indexing applications.

Results:

AAC has completed many successful projects for the NLM. Just a few examples include:

NLM backbone and network perimeter: AAC upgraded NLM's backbone, perimeter switches, firewalls, and load balancer to Gigabit Ethernet. The firewalls were also clustered. As a result, NLM now has a highly available, high-performance network infrastructure that can be upgraded without any downtime.

Messaging and access migrations: AAC planned and implemented NLM's migration from Novell GroupWise® to Microsoft Outlook and Exchange. AAC also migrated all user accounts from NLM to a consolidated NIH Active Directory. Both migrations were mandated by new NIH policy and had the potential to be very disruptive. Planning, testing, and extensive communication with users led to a rapid and uneventful transition.

Storage migration: NLM's transition from EMC Symmetrix to EMC CLARiiON was complicated by a lack of a migration path for Novel NetWare®. After extensive analysis and testing of options, AAC engineers developed and completed a migration strategy over four consecutive weekends. AAC installed new storage hardware, fibre-channel switches, and fibre-channel cabling with zero downtime.

