

## McPC and National Archives

### National Archives upgrades to a fiber optic infrastructure and uses *McPC* to bring fiber, and more bandwidth, to the desktop.

Preserving the nation's history takes a lot of bandwidth. Since 1934, the United States National Archives & Record Administration (NARA) has compiled and preserved 200+ years worth of federal records for individuals wanting to research the history, development and culture of our country.

In addition to its 21.5 million cubic feet of original text material, NARA also has a multimedia collection that includes 300,000 reels of film, 5+ million maps, charts, and architectural drawings, 200,000 sound and video recordings, 9+ million aerial photographs, 14 million still pictures and posters, and 7,600 computer data sets.

With the addition of new technologies—videoconferencing; the Online Public Access Catalog (OPAC) which contains books, microforms, computer disks, and audiovisual materials; the Virtual Library which contains links to full text books, pamphlets, newspapers and historical documents on the World Wide Web; and interactive exhibits—bandwidth is at an all-time premium.

NARA's cabling infrastructure was implemented on a Category 3 Specification (CAT3) Cabling Plant. As a backbone technology, this proved insufficient for supporting the amount of data traffic that can be generated by the simplest of user requests on today's technology platforms.

To support constantly increasing network bandwidth requirements, NARA decided to upgrade its cabling plant to a multi-

mode fiber optic infrastructure. Integrating fiber optics allowed NARA to establish a network infrastructure that will support current and future requirements for multi-media, video, voice, wireless and other data intensive traffic.

### McPC media converters easily bring Fiber-to-the-Desktop, providing users with greater bandwidth.

When planning the upgrade to fiber, bandwidth availability to support the growing demands on network traffic was obviously a main consideration. Therefore, NARA chose to provide a Gigabit Ethernet connection to the Main Distribution Frame (computer room) with 100 Mbps to each desktop.

Two large, redundant switches with Gigabit uplinks and 100 Mbps user ports were installed as the backbone. Both 100 Mbps single-mode and multi-mode fiber was installed to 24 IDF closets located from the basement to the sixth floor. Via the 50/125 micron multi-mode fiber, each closet is dual-homed and connects back to the core switches on the 4th floor. The single-mode fiber will be saved for future applications.

For its horizontal cabling, NARA installed four strands of multi-mode fiber to each user location. Existing equipment at those user locations, however, was all copper-based. Rather than replacing all of the



copper NICs, with costly fiber versions, NARA chose an innovative solution—PC-card level media converters.

Using media converters has always provided a cost savings. With IMC Networks' *McPC*, the industry's first PC-card level media converter, NARA implemented both a cost and space saving alternative. With more than one thousand nodes, that cost and space saving was significant and substantial.

*McPC* mounts inside any PC or workstation with a standard PCI or ISA slot; it does not plug into a bus nor is IRQ utilization required. As with other media converters, *McPC* is a physical layer device that is completely transparent to the network. Because of this, *McPC* also includes troubleshooting features that help to quickly isolate and diagnose problems should they occur on fiber optic networks.

By using *McPC* and bringing 100 Mbps fiber to the desktop, NARA found a cost-effective way of providing users the bandwidth they require to fully utilize the enormous breadth of information at their fingertips and for the technologies that will become available to them in the future. ■



Located in Washington DC, the National Archives and Records Administration (NARA) ensures continuing access to essential evidence that documents: the rights of American citizens, the actions of federal officials and the national experience. By identifying, protecting, and helping people to use the invaluable records of America's past, NARA plays a unique and central role in preserving our national heritage and democratic traditions for all Americans now and in the future.

IMC Networks is a leading ISO 9001 certified manufacturer of hardware for LAN/WAN/MAN network installations. IMC Networks provides innovative physical layer connectivity, optical networking and bandwidth management solutions for enterprise, Telco and service provider networks, and supports Ethernet, Fast Ethernet, Gigabit Ethernet, ATM and FibreChannel networking technologies.

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CASE STUDY