

Case Study

Industry: Education

East Carolina University

Project: Data, voice, and video systems

Major challenge: Seamless crossover without downtime



The background.

East Carolina University has long been known for graduating quality educators and administrators for our nation's primary and secondary schools. Lately, it's also become a hotbed for fine and performing arts. Furthermore, the university's Brody School of Medicine has programs of high distinction in health care. In short, East Carolina is a dynamic institution that finds solutions to problems, seeks the challenges of the future, and brings people and ideas together.

To better connect its faculty and students, the university needed new integrated data, voice, and video systems. That's where we come in.

Project basics.

Our local Black Box Network Services branch designed, installed, and configured the university's integrated data, voice, and video systems at its Greenville, NC campus.

The data system features a fiber optic infrastructure that supports more than 50 buildings. UTP distribution cabling runs to more than 2500 endstation drops, enabling the connection of 4000 nodes to the network. The data network design consists of an ATM backbone, in both looped and point-to-point configurations, that provides 155-Mbps speeds to 22 major node switches. These nodes provide 10-Mbps dedicated Switched Ethernet connections to distribution hubs within sub-node buildings.

The voice system is comprised of a central office switch with redundant fiber distribution to urban switch nodes, forming a SONET ring.

Last but not least, the university's video system provides ample bandwidth for both interactive and broadcast video.

Data system design details.

Black Box technical experts designed the data system so that traffic segmentation controls broadcasts and optimizes bandwidth utilization for more efficient performance.

As part of this design, Black Box replaced all the university's outdated equipment with state-of-the-art, high-speed hubs, switches, and routers. Our techs installed and configured 5- and 14-slot modular chassis with fiber and UTP distribution modules and switches. A Virtual LAN (VLAN) architecture was also implemented to localize broadcasts, provide for network security, and maximize traffic distribution.

The data system provides efficient Layer 3 interconnectivity between TCP/IP subnets, Novell® LANs (IPX™), and AppleTalk® networks. Our techs installed and configured workstation network interface cards (NICs) to support various computers: IBM® and compatibles, RISC-based systems using the Micro Channel bus, as well as Macintosh® computers. Plus our techs executed a systematic, seamless crossover from the old broadband data system to the new network so university personnel and students experienced little downtime.

Black Box also implemented a totally integrated network management system running on a Sun® SPARC® workstation platform with HP® OpenView®. The hubs, associated modules, uninterruptible power supplies, and terminal servers, were fully SNMP manageable using a graphical user interface (GUI).



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