

Company optimizes with 10-GigE

New data center accommodates need for high-performance connectivity.

When LBX Co., headquartered in Lexington, Ky., was moving to a new corporate campus, John Chumney, LBX IT manager, faced the task of building a new data center—with a completely new laundry list of communication and data center needs to support the media selections and performance requirements needed for the company's future growth. High-performance connectivity solutions were at the top of his agenda.



John Chumney, right, information technology manager at LBX Co., and Donnie Colvin, infrastructure division manager at U.S. Voice and Data, teamed up to build the infrastructure for LBX's new headquarters building.

To make room for its rapidly growing business, LBX purchased nine acres to accommodate an office building, as well as a separate distribution and training campus location. The challenge posed with the construction was not limited to floor plan designs; LBX also had to determine its communication equipment needs and design a data center to support current and future growth. LBX is a global provider of Link-Belt earthmoving, forestry, scrap and material-handling equipment.

Chumney, who was responsible for the planning and installation of the data center, worked with Bristol Group Construction to design the building, including the size of the new computer room, with computer, printer and telephone connection locations. Following numerous blueprint revisions and internal meetings, LBX chose a final drawing and utilized a bid process for its communication needs.

During this process, Chumney worked with U.S. Voice and Data, and ultimately retained the company for its services. U.S. Voice and Data's infrastructure division manager, Donnie Colvin, was assigned to the project oversight and planning process. Colvin assisted with LBX's cabling design layout and blueprint creation, and enabled Chumney to ensure the company would meet its communication and data center goals.

The headquarters and remote building floor plans determined the location of system components, including telecommunication closets, spaces and pathways. A key element was the ability to grow into multimedia streaming video capabilities. The final consideration to meet communication and data center needs was the cable choice to support the media selections and performance requirements.

With LBX's technical requirements identified, Colvin turned to strategic infrastructure partner Mohawk for high-performance cable needs. Since the plans integrated future bandwidth growth, cable choices reviewed included Mohawk's 6LAN (Category 6 UTP), AdvanceNet (Category 6e UTP) and GigaLAN 10 (augmented Category 6 UTP) products.

10-GIGABIT ETHERNET SELECTED

Although 6LAN and AdvanceNet offered superior technical characteristics, Mohawk's GigaLAN 10 was chosen. According to Chumney, "The main reason we chose GigaLAN 10 was for future high-speed (10-Gigabit Ethernet) requirements and to eliminate the need to replace cable in the future."

GigaLAN 10 provides capacity for LBX's demanding data center network requirements—from voice applications to network storage. The Category 6a UTP cable supports 10G BASE-T applications over a full 100-meter channel and provides 750 MHz confirmed stability. The cable's FlexWeb, combined with a patented fluted jacket construction, isolates cable pairs and offers pair-to-pair balance for superior headroom.

Designed specifically for 10G BASE-T applications, GigaLAN 10 is also fully backward com-

patible for 100BASE-T (Fast Ethernet) and 1000BASE-T (Gigabit Ethernet) applications. The cable design exceeds the Category 6a draft-specified component stipulations.

With the cabling selected, U.S Voice and Data provided LBX with communication equipment and an Inter-Tel 5000 communication system. These offered LBX a configuration consisting of tightly integrated presence management, collaboration and messaging tools to enhance employee productivity and mobility.

Inter-Tel 5000 provides full network support and feature transparency for LBX's multiple locations via existing WAN infrastructures. Inter-Tel's Unified Communicator software was chosen to provide voice and audioconferencing, Web conferencing, and desktop videoconferencing. The software includes tools to assist LBX with communications management and improve business processes with the LBX call center. The software also allows users to manage the status and forwarding information for their multiple devices, such as office phones, IP phones, SIP devices, cellular phones and wireless devices, as well as personal computers and handhelds.

A DETAILED NETWORK LAYOUT

Upon selection of GigaLAN 10 and the Inter-Tel 5000 communication system,

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Chumney and Colvin established the data center layouts, including required cabinets, drops, outlets and workstations. The backbone was built once the preliminary construction was completed. To support the campus applications to the remote building, details were included for routes, support systems, conduits, duct banks and manholes.

The data center consisted of GigaLAN 10 installed from the distribution frame running vertically to the cable tray and then running horizontally along the ceiling, and connected to conduits throughout the building to each desktop location. The team encountered a problem with the ladder trays constructed for the GigaLAN 10 product. Since the diameter size was larger than traditional Category 6 products, the original

setup of 12-inch ladder trays resulted in a shortage of conduits for fill space. Despite the unplanned delay, the team was able to resolve the problem by reconstructing 20 four-inch trays and adding the additional conduit required.

The primary change to the company's system was replacing all Dell 100-megabit Ethernet switches with updated Dell 2724 and 5324 Gigabit Ethernet switches. LBX also installed several fiber-optic modules in selected Dell power-connect 2724 switches in order to connect the entire campus. The updated network included Dell 2850 PowerEdge servers and Microsoft Windows Server 2003.

After construction was completed on schedule, multimedia communication applications were available at desktops and conference rooms. A state-of-the-art presentation system was installed in LBX's training room with a high-definition television screen. Employees were equipped with advanced communication tools, including remote-access capabilities.

With its choice of cable and communication equipment, Chumney says, LBX gained advanced communication abilities and capacity for increased technological capabilities without incurring future costs. "We are ready for anything that may come along," he claims. "It is much easier to install it initially than to have to replace cabling in the future." □

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