

## Case Study: University of Nebraska—Lincoln High-Performance Networks for Data-Intensive Experiments



### The Solution

UNL called upon Internet2 FiberCo to replace its existing leased circuits with purchased dark fiber assets, stretching across 234 miles from Lincoln to Kansas City. Following that successful effort, and in order to efficiently light the fiber, UNL looked to Internet2's Professional Services team. From the requirements gathering stage to deployment, UNL relied on Professional Services' project management expertise and strong partnership with Level 3 throughout the network delivery process:

- Co-designed the network engineering plan
- Co-developed RFP for the optical equipment
- Provided quantifiable assessments of responses
- Reviewed technical specifications
- Organized site specifications and collocation suite requirements
- Managed project issues and deliverables

### The Results

"By relying on Internet2 FiberCo and Professional Services we were able to build out a much broader infrastructure than we could have done otherwise. They supported our team every step of the way, simplified the project and brought the connectivity together for us" said Dale Finkelson, Director of Networking for Information Services, UNL. "When we plugged it all in, it worked, and within 20 minutes, FermiLab was sending us 6 Gbps of LHC data over the new connection."

The new network connects UNL to Internet2's Network through the Great Plains Network POP in Kansas City. UNL anticipates traffic will significantly expand as the LHC experiment officially goes online in summer 2008. At that time, they'll be continually receiving Tier 1 data, and transmitting terabytes per month of on-demand data to a wide range of Tier 3 and Tier 4 locations.

"We're confident that our new network gives us a reliable, flexible and scalable platform for future growth, including the capability to provision dynamic or static circuit services" said Finkelson. "It provides an environment for our researchers to participate in other data-intensive experiments that will present themselves to us."

### The Situation

The University of Nebraska—Lincoln (UNL) is one of 68 U.S. universities and national laboratories collaborating with the worldwide physics community on the Large Hadron Collider (LHC) particle physics experiment. UNL also serves as one of the 15 Tier 2 centers for the experiment's massive data collection, distribution and analysis effort. The tiered nature of the LHC program requires that UNL receive regular, sustained data transfers of 5 Gbps from the Tier 1 center at Fermilab. In turn, UNL will send 2 terabytes of data, on demand, to Tier 3 and Tier 4 sites, completing those transfers within 4 hours.

### The Challenge

The existing OC-12 (622 Mbps) UNL backbone connection to Internet2 was insufficient to meet the LHC program's networking requirements. UNL needed a comprehensive solution which would bring the most advanced networking facilities to its campus in order to support this bandwidth-intensive research program.

*"They supported our team every stop of the way, simplified the project and brought the connectivity together for us."*

Dale Finkelson  
University of Nebraska—Lincoln  
Director of Networking for  
Information Services