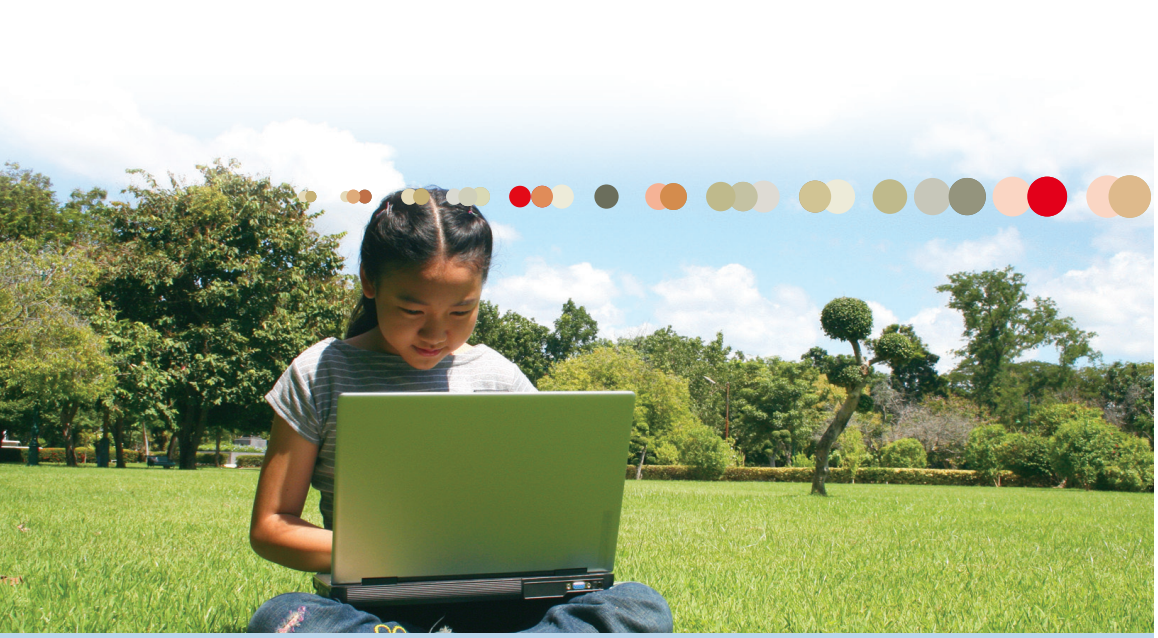

Case Study

Paradise Valley Unified school district takes learning to the next level

Overview

For the 34,000 students population of the Paradise Valley Unified School District (PVUSD) and their teachers, gaining access to digital content – searching the Internet, downloading a movie from a digital library or simply looking up grades – has never been easier. In mid of 2007 the fourth largest school district in the state of Arizona has invested in new, high capacity wireless networking gear from Ceragon Networks. With the new network in place, the school district will be able to offer advanced communications and eLearning applications that will increase and improve its network connectivity.

The Challenge

Enable better communication, at a lower cost

The Paradise Valley Unified School District faced the challenge of economically and flexibly connecting 47 campuses, with buildings spread over 98-square miles of rolling terrain, in a single school district. On a daily basis each campus typically downloads several Gigabytes worth of data and transfers it back to the District Administration Center for critical record-keeping information. As important information was being transferred on a regular basis, Paradise Valley USD needed a more efficient way to connect back to the District's Administration Center. With excess utilities going away in the Fiscal Year 2008/2009 and the future uncertainty of Federal E-rate funding, Paradise Valley USD decided it was time to build out their own private WAN infrastructure. The question and challenge facing Paradise Valley USD was how to accomplish this major feat.

The Solution

Move the district into the future with high-capacity wireless links

Paradise Valley USD had been paying for T-1 connections between all the campuses. The lines were expensive and cumbersome but were required to handle the voice, video and data traffic created by the district to teach students in Kindergarten through 12th grade. The district, situated in the fast growing area of northeast metropolitan Phoenix and the southern edges of North Scottsdale, was pushing the limits of the T-1's bandwidth and reliability.

After evaluating its IT options, Paradise Valley USD's decision makers chose to set up a network which would offer advanced services like Internet Protocol Television (IPTV), Voice over IP (VoIP) and eLearning applications over secure wireless connections.

100 foot-tall monopole at the District Administration Center (DAC) connects to the District's other 46 campuses. (Source: NIC)

"Our students and teachers will enjoy an improved educational experience through advanced communications, IPTV and eLearning applications."

Jeff Billings, Director of Technology PVUSD

CERAGON

Following a competitive bid process, the Paradise Valley USD selected Ceragon's Gigabit Ethernet and Fast Ethernet solutions to connect the elementary, middle and high schools to the District Administration Center. The construction of the new network was handed to Network Infrastructure Corporation (NIC), a network technology planning and implementation company.

FibeAir IP-MAX, high-capacity wireless IP solution from Ceragon

Ceragon's high-capacity FibeAir™ IP-MAX solution was selected to feed the campuses with high-speed 1 Gig-E Ethernet connections to the high schools and 100Mbps Full Duplex to the middle and elementary school campuses. A 1.25 Gbps link was put in place to connect to the Distribution Center. The bandwidths of each link were determined after evaluating the data needs of each campus type. With the district's move to IP video distribution as well as IP telephony it was determined that IP traffic was the priority and standard for the district.

The majority of the campus links were mounted directly to the existing campus structure. The links were strategically placed to ensure un-interrupted connects between the links using Line of Site (LoS) studies. This included the erection of a 100ft monopole at the District Administration Center (DAC) location along with a 65ft monopole at Desert Shadows Middle School.

The links, powered by Ceragon's FibeAir, operate primarily at 18GHz and 23GHz frequency spectrums transmitting data from the pre-existing systems within the district campuses. The network is designed for 99.999% reliability and is currently used for video, data and voice services. Because the voice traffic is routed over the data network, inter-campus calls come at no additional cost, providing the early and long-term return on investment (ROI).

This same network will also allow for a single video database that can be controlled centrally but accessed anywhere within the district. This will create a virtual library allowing teachers and staff to share resources easier than before.

"Thanks to Ceragon Networks integrated solution provided by CDW-G/NIC, Paradise Valley Unified School District will gain inter-site connectivity, greater network capacity and improved availability, all with an anticipated cost savings as we will no longer need to pay to lease T-1 lines to connect our school district network," said Jeff Billings, Director of Technology Paradise Valley USD. "Our students and teachers will enjoy an improved educational experience through advanced communications, IPTV and eLearning applications."

A Bright Future

With the Paradise Valley USD's investment in technology, they have enabled themselves to provide superior education to their students and created a state-of-the-art teaching environment for their staff. Not only is the District the fourth largest in the state of Arizona, it also has the largest district-wide wireless network in the nation that will provide early and continuing ROI in the classroom and the bottom-line.

Multiple FibeAir links at the high schools keep data transferring at connection speeds supportive of voice and video traffic. Using Ceragon's advanced high-capacity wireless solutions, Paradise Valley USD and NIC are creating a state-of-the-art learning environment for the Paradise Valley USD students.