

Challenges

- Provide an IP network with strong reliability and performance for:
 - IP telecommunications
 - Video surveillance and access control for improved security and safety
 - BYOD and mobile applications
 - Expanded use of educational, administrative, and operational technologies
 - State-mandated online testing initiatives
- Improve in-house management, maintenance, and trouble-shooting capabilities
- Achieve cost-savings

Value

- Scalable wired and wireless network that features easy management and strong performance
- Enhanced safety and security
- Compliance with state-mandated online testing
- Cost and labor savings:
 - \$50,000 annual maintenance cost reduction
 - \$2000 savings per building for access installation
 - \$900 savings on each camera installation
 - Electricity and AC
 - Vast savings in IT service time

Ohio school district embraces the future with high-performance, cost-effective network solutions



Lyndhurst, Ohio – The South Euclid Lyndhurst school district needed to upgrade their 14-year-old telephone system to provide more efficient service for staff and enhance their

“Our legacy telephone system was extremely outdated,” explains Joe Alessandro, Technology Supervisor. “I don’t think any of our 500 users were happy with it. For us, it was very cumbersome to manage and we had to rely on vendors to make most changes – all very costly. For the staff, it offered very limited features and an inadequate voicemail system.”

After considering a number of options, the Avaya IP Office™ Platform was the right fit for the district. It is a feature-rich system designed to be extremely cost-effective, scaling well for small- and medium-sized organizations.

But one large question loomed: could the district justify the cost of the network upgrades necessary for IP telephony?

Heavy Network Demands

The district explored a number of network systems to accommodate its preferred candidate for IP telephony, Avaya IP Office. As it turned out, a cost-efficient, high-performance Avaya network became very justifiable when the district’s management took into account the critical applications, in addition to telecommunications, that would be significantly improved. These included:

- Video surveillance with 350 cameras across eight facilities, and other multicasting functions
- Wireless LAN for bring-your-own-device (BYOD) capabilities and a long-range plan to provide district-owned mobile devices to students
- A wide range of administrative and educational software

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— Pete Palazzo,
Technology Specialist

The district knew both wired and wireless network upgrades would be needed to accommodate for significant increases in bandwidth requirements. For example, Partnership for Assessment of Readiness for College and Careers (PARCC) online testing initiatives would soon be mandated by the State of Ohio.

It became clear as the district’s IT roadmap unfolded, that they were going to demand a lot from their new network. Alessandro explains, “We needed a network refresh, starting with our backbone. We had to prepare for the increasing bandwidth requirements that would come from IP phone traffic, very heavy video surveillance and our other critical applications.”

The district’s IT team examined a number of vendor solutions for their network upgrade, and after careful consideration they chose Avaya solutions: Avaya Virtual Service Platform (VSP) 7000, Avaya VSP 4000, and Avaya Ethernet Routing Switches 4800 series for their wired infrastructure as well as Avaya Wireless LAN 9100 series for their wireless infrastructure.

A New Approach to Network Architecture

The district’s management team discovered that Avaya’s approach to networking offers significant advantages over traditional, legacy solutions. As the main platform for the South Euclid Lyndhurst Schools’ new network, Avaya VSP 7000 provides them with a unique architecture that is extremely more efficient than traditional network configurations. In addition, they added Avaya’s Fabric Connect technology to enable end-point provisioning, leaving the network core completely untouched. The high levels of reliability and resiliency, with always-on application access, have revolutionized change administration and execution for real-time provisioning and genuine service agility.

The district is utilizing Avaya VSP 4000 series to extend Avaya Fabric Connect to the edge so their administrators can deliver multiple services without managing numerous complex protocols. The district’s IT team can now deploy new services faster and respond far more quickly to requests for moves, adds, and changes. Also, application performance is improved because of the network’s high level of resiliency.

The Avaya solution the district implemented took out the complexity of networking for them, resulting in significantly lower operational expenses (OPEX) while delivering a comprehensive array of network services. Physical topology is now irrelevant, and complex design rules have been eliminated – enabling their administrators to build any logical topology wherever and whenever it’s required. Their IT investment is now protected with a future-ready, standards-based technology that prevents vendor lock-in and helps ensure seamless integration with any network solution.

Pete Palazzo, Technology Specialist, comments, “With our new network, we’re finding that it’s very easy to provision a new application. Instead of configuring all the switches individually, we only have to make the change once at the edge. So it takes hours, rather than weeks.”

Avaya Fabric Connect Enables Superior Multicasting

A highly significant advantage of the Avaya Fabric Connect solution over traditional approaches is the absolute simplicity in provisioning, deploying and maintaining IP multicast bridging and routing. This simplicity results in:

- Reduced OPEX costs
- Increased uptime
- Greatly improved performance

These benefits enhance the many applications in which multicasting is employed, including video surveillance, IPTV, the virtual data center, commercial functions, and others.

(For more information about multicasting with Avaya Fabric Connect, please visit http://www.avaya.com/usa/documents/the_new_world_of_ip_multicasting01.pdf.)

Multicasting capabilities are extremely important to the South Euclid Lyndhurst school district because of their widespread use of video surveillance and door access controls.

The district’s IT team has noticed a significant improvement in the performance of their 350 Pelco video surveillance cameras since the installation of their new Avaya network. According to Palazzo, “The cameras pull up much quicker, and the whole multicast feature is greatly improved. We used to encounter both

lag time and choppy video, but we haven't experienced either of those issues since deploying the Avaya network. The speed and clarity help ensure that we don't miss any security incidents that require attention. Also, the issues we were experiencing with our door buzzer functionality have been completely eliminated."

"We are saving a lot of money by utilizing IP cameras and IP door access. We used to have to run a coax cable to each camera, then back to a central location at each building," Palazzo recalls. "Now we control everything from our communication closet at our centralized data center, so installations are very easy and much more cost-effective. We estimate that we save about \$2,000 on each IP door access installation and about \$900 on each of our 350 IP video cameras."

The district has also appreciated a significant time savings in imaging 600 new laptop computers (approximately 30 at a time), using Microsoft System Center and sending a multicast image out. This can be done from the data center at the high school, no matter where the new computers are located.

"A Very High-quality User Experience"

The district is also deploying Avaya Wireless LAN 9100, which is designed to deliver priority access to the educational applications and services, and minimize the impact of bandwidth-heavy personal and 'recreational' applications.

Facilities are being upgraded to Avaya Wireless LAN 9100 in a phased roll-out, prioritizing the areas most in need of service improvement. When the roll-out is complete across the district's eight facilities, they plan to utilize the system's sophisticated application control features to

optimize predictable performance for all mobile users, even under heavy network load. They will prioritize critical applications, restrict usage of bandwidth-heavy applications, and block restricted applications from the network.

Allessandro states, "As BYOD, one-to-one [one student-one device], and other mobility trends grow, we want to make sure we can deliver a very high-quality user experience. We are confident we will accomplish that with Avaya. The new wireless network will also provide strong support for the new state online testing initiatives that we expect to begin as early as next year."

Avaya IP Office: "A Real Hit" Throughout the District

Avaya IP Office, the district's Unified Communication solution for all of its eight locations, has proven to be an outstanding enhancement for the their educators, who, most significantly, wanted a method for accessing their voicemail remotely. The district now has a general voicemail box, and each user can access it from any location with his or her extension number. For each new voicemail, IP Office sends the user an email notification that includes a convenient message retrieval option.

IP Office also provides additional safety and security features for the classroom phones. For example, users can easily speed-dial any building's security desk they need to reach. Built-in features allow a 911 operator to pinpoint not only the building from which a call originates, but also the exact room, which was not possible before. In addition, the data center now receives an email every time a 911 call is made.

The new system has enabled the district's IT team to minimize the footprint significantly. Server functionality has been consolidated at the data center in the high school facility, with gateways at each building. This saves both electricity and air conditioning costs at every location.

Palazzo says, "Our users are very pleased with the new Avaya IP Office phone system because it is absolutely reliable and offers many features that we did not have before. The voicemail service that involves email notifications and message access is a real 'hit', and our more tech-savvy users are looking forward to our deploying IP Office's many advanced capabilities, such as the mobility features, conferencing, and unified communications. In particular, these will give our administrators a host of flexible options that we could not make available to them before."

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Systems, Applications, and Services

- Avaya Fabric Connect, an extended implementation of the IEEE/IETF standards for Shortest Path Bridging
- Avaya Virtual Services Platform 7000
- Avaya Virtual Services Platform 4000
- Avaya Ethernet Routing Switches 4800 series
- Avaya IP Office™ platform
- Avaya WLAN 9100 series
- Pelco IP cameras
- Integration by Laketec Communications

About Avaya

Avaya is a leading, global provider of customer and team engagement solutions and services available in a variety of flexible on-premise and cloud deployment options. Avaya's fabric-based networking solutions help simplify and accelerate the deployment of business critical applications and services. For more information, please visit www.avaya.com.

“We Have Future-proofed Ourselves...”

Alessandro concludes, “Technologically speaking, I think we’ve future-proofed ourselves for many years to come, because we have gone with the most cutting-edge technology instead of traditional networking. The scalability of our Avaya network solutions is very important because it accommodates both growth and new technologies. We believe there’s nothing we won’t be able to accomplish in the future.”

Learn More

For more information, contact your Avaya Account Manager or a member of the Avaya Connect channel partner program, or access other collateral by clicking on Resource Library at www.avaya.com.

Statements in this case study were made by Joe Alessandro, Technology Supervisor; and Pete Palazzo, Technology Specialist.

Photos courtesy of the South Euclid Lyndhurst Public Schools Technology Department.

ABOUT SOUTH EUCLID LYNDHURST (OHIO) SCHOOL DISTRICT

Established in 1924, the South Euclid Lyndhurst (SEL) school district serves the communities of South Euclid, Lyndhurst, and a portion of Richmond Heights. Over the years, the SEL school district has positioned itself as a leader in education in Northeast Ohio, often leading the trend in curriculum and educational programming. The district has state-of-the-art facilities and strives to incorporate technology into classroom learning. With a diverse population of 3,800 students, the SEL school district prides itself on providing an array of academic and extra-curricular activities, allowing students to further their academic development and become well-rounded, high-achieving adults. Learn more at <http://www.sel.k12.oh.us/>.

ABOUT LAKETEC COMMUNICATIONS

Founded in 1989, Laketec has grown into a world-class, full service, Information Technology company. Laketec not only supports enterprise class VOIP phone systems but also has the in-house expertise to support most other areas of networking as well. Network segments like WAN, LAN, server, application, desktop, virtualization, and monitoring are just some of the areas in which the company currently supports its customers. See more at <http://www.laketec.com/>.

ABOUT PELCO

Pelco by Schneider Electric is a world leader in the design, development, and manufacture of video security systems and supporting equipment ideal for any industry. From an impressive manufacturing facility located in Central California and through a responsive global network of professional sales representatives, Pelco continues to offer new technologies, products, and services that constantly confirm the company's position as the security industry's premier video systems and equipment manufacturer. See more at www.pelco.com.

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