School District Upgrades Network for BYOD and Unified Communications

Customer Case Study

School District of New London tripled wireless throughput by deploying Catalyst 3850 Switches.

EXECUTIVE SUMMARY

Industry: School District of New London Education
Location: New London, Wisconsin
Potential users: 2500 Students; 350 Teachers and Staff

Challenge

- Support bring-your-own-device (BYOD) and unified communications
- Reduce time spent on network management
- Refresh outdated network to get ready for new learning and administrative applications

Solution

- Built robust and easy-to-manage network with Cisco Catalyst 3850 Switches
- Deployed Cisco Unified Communications Manager to replace school PBX systems

Results

- Engaged students by allowing them to access learning content from anywhere
- Significantly reduced time to manage switches and wireless access points
- Avoided costs to bring power to wireless access points and IP phones

Challenge

Located in East Central Wisconsin, the School District of New London serves 2500 students in four elementary schools, a middle school, and a high school.

To engage a new generation of learners, the district wanted to introduce a bring-your-own-device (BYOD) program. "We don't have enough computers for every student, and BYOD is a way to get closer to 1:1 computing," says Wade Berglund, network administrator for the district. The district also wanted to lower ongoing costs by replacing each school's private branch exchange (PBX) system with a centralized unified communications system.

But before moving forward with BYOD and unified communications, the district needed to improve its network. Although the old switches still worked, they didn't provide enough bandwidth for a good wireless experience. The problem would grow as more students and staff brought personal smartphones and tablets to school.

The old switches also took too much time to manage. "It's up to me to support 1200 computers in nine buildings," Berglund says. "That means the most important requirement for our new switches was ease of management."

Solution

"I don't have time to do a lot of research, so I explained our requirements to our Cisco partner, who acts as our trusted advisor," Berglund says. The partner, Heartland Business Systems, recommended Cisco Catalyst® 3850 Switches and Cisco Unified Communications.

At the high school, eight Cisco Catalyst 3850 Switches are placed around campus to be close to the Cisco wireless access points. The school connects to a Cisco Catalyst 4500 Switch in the district office over fiber, by way of a Cisco Integrated Services Router (ISR). Other schools also connect to the district office through Cisco ISRs.

"We have a small high school in a small town. But we were able to afford and manage a reliable and secure wireless network using Cisco Catalyst 3850 Switches and the Cisco wireless solution."

Wade Berglund
Network Administrator
School District of New London

The Cisco Catalyst 3850 Switches make network management more efficient, saving time for Berglund every week. "The Cisco Catalyst 3850 also provides power over Ethernet, which saved us the expense of bringing power to our wireless access points," he says. So far, the high school has 35 wireless access points, one for every two rooms. As more students and staff start bringing more devices to school, Berglund and the Cisco partner will monitor usage to decide where to place additional access points.

Performance of the existing wireless network tripled after the district deployed the Cisco Catalyst 3850. The Cisco Catalyst 3850 Switch does not slow down wireless traffic as the old switch did, because it provides 40 Gbps of wireless throughput and 480 Gbps of wired throughput.

The district deployed Cisco Unified Communications Manager in the district office and is connecting schools one at a time, starting with the middle school. The high school and administration building will be next. "The middle school is already saving money every month with Cisco Unified Communications," Berglund says. One reason is that Cisco Unified Communications Manager can connect to the service provider over a private rate interface (PRI), which costs less. The other is that the school no longer needs to pay a technician for every telephone extension move, add, or change.

Results

Supported More IT Projects with Same Size IT Staff

Now that he can centrally manage the entire network, Berglund has more time for IT projects to support learning or administrative efficiency, like BYOD and unified communications. Illustrating the time savings, Berglund recently created a new VLAN to connect the district's police liaison officer to the local police department network. "Creating a new VLAN for our wireless access points took just a few minutes with the Catalyst 3850," he says. "With our old switches the same process would have taken about two days."

Introduced a Successful BYOD Program

Students and staff at the high school have already registered 500 personal smartphones and tablets to use on the network. Teachers are taking advantage of BYOD to engage a new generation of learners. "When students can look up answers to their own questions, they take a more active role in learning," says Danielle Sievert, associate principal for New London High School. "They don't have to wait till it's their turn in the computer lab."

Administrators use the Cisco wireless network to work more efficiently. During teacher evaluations, for example, they can enter notes into the system from their smartphone or laptop instead of taking the time to walk back to their office computer. "Administrators can also access our student information system from anywhere in the building for any safety, emergency, or health situation," Berglund says. "They no longer need go back to their office to access information."

Lowered Costs

Costs have decreased since New London Schools implemented the Cisco solutions. First, the district saved the costs and staff time to bring power cables to the access points and IP phones. The Cisco Catalyst 3850 Switch provides inline power over Ethernet. "Not having to worry about electrical wiring made installing the wireless access points was so simple I did it myself," Berglund says. "This saved even more money."

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Danielle Sievert
Associate Principal
New London High School

Another source of cost savings is not having to add a second Ethernet port in each classroom and office for Cisco Unified IP Phones. Instead, the phones connect to the office's existing port, and the desktop PC connects to a port on the phone.

Berglund concludes, "We have a small high school in a small town. But we were able to afford and manage a reliable and secure wireless network using Cisco Catalyst 3850 Switches and the Cisco wireless solution."

Next Steps

Now the School District of New London is planning to connect the high school to Cisco Unified Communications Manager and retire its old PBX system. Once that happens the district might start using Cisco Jabber® so that teachers and staff can see which coworkers are available and just click to call or send an instant message. They will be able to use Cisco Jabber on any device, including personal smartphones and tablets.

"Our wireless solution has worked so well at the high school that we'd like to extend it to the middle school and elementary schools," Berglund says. "We might not necessarily use it for BYOD in the lower grades, but allowing teachers and staff to connect from anywhere, with any device, would help to improve administrative efficiency and student safety."

Product List

Switches and Routers

- Cisco Catalyst 3850 and 4500 Switches
- Cisco Integrated Services Routers 2821 and 2901

Wireless

- Cisco Wireless Access Points

Unified Communications and Collaboration

- Cisco Unified Communications Manager
- Cisco Unified IP Phones 7945

For More Information

- To learn more about Cisco Catalyst 3850 Switches, visit: www.cisco.com/go/3850.
- To learn more about Cisco BYOD Solutions for schools, visit: www.cisco.com/web/strategy/education/primary_wireless_K-12.html.
- To learn more about Cisco Unified Communications in schools, visit: www.cisco.com/web/strategy/education/communications_k12.html.

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