

Promoting Teaching and Learning Success with Mobility



Lake Washington School District turns to Cisco 802.11n wireless network to support 1:1 computer-to-student initiative.

EXECUTIVE SUMMARY

Customer Name: Lake Washington School District
Industry: Education
Location: Redmond, Washington
Students and Faculty: 24,500 students, 1,485 teachers
Schools: 31 elementary, 12 junior high, 8 high schools

BUSINESS CHALLENGE

- Increase the performance and throughput of the wireless network
- Accommodate significantly more wireless devices in and out of the classroom with access virtually everywhere
- Offer a more reliable and consistent network experience for students, teachers, and staff

NETWORK SOLUTION

- Cisco Unified Wireless Network delivering broad access to students and faculty
- Cisco Aironet 1140 Series Access Points for enhanced throughput and a more reliable end-user experience
- Cisco Wireless Services Module Controllers for Cisco Catalyst 6500 Series Switches for real-time communications between access points and other WLAN controllers
- Cisco Wireless Control System for designing, controlling, and monitoring the wireless network

BUSINESS RESULTS

- Enabled students to use the wireless devices of choice
- Empowered teachers with flexible access to the applications needed for teaching success
- Enhanced the learning experience for students

Challenge: Keeping Pace with Technology

Located east of Seattle in the state of Washington between Lake Washington and the Cascade Mountains, Lake Washington School District (LWSD) is the sixth largest school district in the state, employing 1,485 teachers who help 24,500 students achieve academic success. The district stretches across 76 square miles and includes 50 elementary, junior high, and high schools. The school district is recognized nationally as a leader in using technology in the classroom.

LWSD's mission is to ensure that every student is **Future Ready: Prepared for College; Prepared for the Global Workplace; and Prepared for Personal Success**. To achieve this mission, LWSD remains focused on empowering faculty, staff, and students with the educational tools that foster a rich learning environment. Understanding the growing importance of technology in its high-performing public school district inspires the organization to continually look for ways to use the technology infrastructure to advance learning.

In 2006, the district deployed an 802.11a/b/g wireless network to supplement existing network access provided to students and faculty. Though it enhanced the learning environment and helped reduce cabling and network management costs, the Wi-Fi network couldn't keep pace with the district's progressive technology initiatives.

New approaches to learning and funds from a levy aimed at equipping every secondary student with a laptop have resulted in the demand for more performance from the wireless network. “We needed superior throughput from our wireless network to be able to bring in all of these new devices and ensure that the network could support them,” says Dr. Vaile.

After thorough assessment and performance testing of several wireless solutions, LWSD selected the Cisco® Unified Wireless Network to replace its existing wireless solution. “We quickly discovered that the Cisco 802.11n wireless solution delivered the best performance of those we tested. That performance level is critical not just to enrich learning, but also for the best return on investment given our tight technology budget.” The Washington school district also selected Cisco for ease of wireless management and advanced device density, video, and guest access capabilities.

“Engaging with students is different now than it was yesterday. Our Cisco wireless network allows teachers to use technology as an integral part of their teaching strategies. It also gives every student access to the resources they need to be **Future Ready: Prepared for College; Prepared for the Global Workplace; and Prepared for Personal Success.**”

— Dr. John Vaile, Assistant Superintendent Technology & Information Services, Lake Washington School District

Solution: High-Performance Wireless Network

The district’s new Cisco Unified Wireless Network includes Cisco Aironet 1140 Series Access Points. These energy-efficient devices are deployed in each classroom and other key locations, such as courtyards, greenhouses, and school stadiums. The access points are supported by Cisco Wireless Service Module (WiSM) Controllers for Cisco Catalyst® 6500 Series Switches.

A Cisco Wireless Control System offers LWSD network analysts the built-in tools and templates that enable them to plan, deploy, monitor, troubleshoot, and report on the Cisco wireless network throughout its lifecycle. The transition to the Cisco wireless network has gone smoothly for the district - the network is easy to manage and the Cisco Technical Assistance Center provides comprehensive support.

“The superior performance inherent in the Cisco wireless network is vital to our teaching and administrative requirements,” says Vaile. “But just as important, we need to know that the network will work for us every day and into the future. Unlike other vendors, Cisco provides us an entire support team plus 24/7 help from its Technical Assistance Center. The Cisco network offers the flexibility and scalability to meet our changing technology needs.”

The Cisco 802.11n wireless network provides the high-performance wireless connectivity needed for technology and teaching innovation. Cisco VideoStream and its multicast-to-unicast conversion capabilities optimize the delivery of rich-media applications used in LWSD classrooms and for faculty training programs and other activities. The LWSD technology team is able to achieve the performance benefits of the 802.11n network for legacy 802.11a/g devices using Cisco ClientLink technology, providing superior performance for applications such as Microsoft Exchange 2010, which is used by faculty and staff. The performance benefits include being able to support twice as many clients as before.

PRODUCT LIST

Wireless

- Cisco Aironet 1140 Series Access Points
- Cisco Wireless Service Module Controllers for Catalyst 6500 Series Switches
- Cisco Wireless Control System

Routing and Switching

- Cisco Catalyst 6500 Series Switches

With more and more devices on the LWSD network these days, the technology staff is enhancing wireless device density with Cisco BandSelect, another important feature of the Cisco Aironet 1140 Series Access Points. BandSelect improves capacity on the network by helping to ensure that the district's wireless clients use 5-GHz frequencies effectively, for expanded bandwidth.

Results

Since deploying the Cisco Unified Wireless Network, LWSD is reaching its fundamental goal of offering the same network experience to students, faculty, and staff whether they're accessing the physical or wireless network. "Now, anyone in the district can log into the physical or wireless network and have the same seamless experience," notes Dr. Vaile. "The Cisco wireless network is that reliable."

The school district is using the Wi-Fi network to deliver on its 1:1 computing initiative to middle and high-school students, and 3:1 computing to elementary students. Whether students and instructors are using netbooks, iPads, iPhones, or other wireless devices, and regardless of where the users are located on campus, they can access the school network for the applications they need.

District employees have reported that everything from video applications to educational software runs better on the new Cisco wireless network - no matter how many devices are connected. Device density continues to grow as more and more students bring laptops and netbooks to school. Previous issues with several wireless devices in a single classroom getting hung up simultaneously on the wireless network - creating learning disruption and teacher frustration - are a thing of the past.

Outside the classroom, administrators have mobile access to the attendance system. A visiting parent can securely log in via guest access to view their child's lunch balance and immediately submit payments online. Teachers can update student grades from the break room. District management can manage instructor performance data from any school location.

Most important, though, is how the network supports the district's commitment to providing teachers and students with everything they need to be successful. "Engaging with students is different than it was yesterday," stresses Vaile. "Our Cisco wireless network allows teachers to use technology as an integral part of their teaching strategies. It also gives every student access to the resources they need to be **Future Ready: Prepared for College; Prepared for the Global Workplace; and Prepared for Personal Success.**"

For More Information

To find out more about the Cisco Unified Wireless Network and 802.11n technology, visit: <http://www.cisco.com/go/nextgen-wireless>.

To learn more about the Lake Washington School District, visit: <http://www.lwsd.org/>.



Americas Headquarters
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San Jose, CA

Asia Pacific Headquarters
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