

## LAKE WASHINGTON SCHOOL DISTRICT

Lake Washington School District Gets a UC & Network Upgrade



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### SOLUTION OVERVIEW

- Lake Washington School District's (LWSD) legacy Nortel phone system was approaching end-of-life and lacked the capacity to expand to meet their needs.
- LWSD's core network infrastructure also needed an upgrade to support a new unified communications solution and provide new educational experiences.
- Cerium helped LWSD with the multi-site, multi-phase, multi-year deployment of a Microsoft Skype for Business, along with a high-capacity, enterprise-grade Layer 2 / Layer 3 network switch infrastructure, including industry-leading Cisco Nexus and Cisco Catalyst switches.

Covering 76 square miles with 33 elementary schools, 13 middle schools, 9 High Schools, Lake Washington School District (LWSD), the third largest school district in Washington state, serves students from the cities of Kirkland, Redmond, Bothell, Woodinville and Sammamish.. Like many school districts across the country, advances in technology are changing the way LWSD staff, students and parents interact. Located in the shadow of Microsoft's headquarters, with parents of many LWSD students working for Microsoft, LWSD is a tech-savvy district that uses technology frequently and in unique ways to support learning.

### The Challenge

LWSD knew they needed to upgrade their unified communication solution. Their legacy Nortel phone system was approaching end-of-life and lacked the capacity to expand to meet their needs. LWSD's core network infrastructure needed an upgrade to support their new unified communication solution and provide new educational experiences. LWSD turned to Cerium Networks for help transforming their communications system and upgrading their network routing and switching infrastructure. Together they designed a solution that would enable LWSD to leverage their existing investments in Microsoft technology, keep pace with the proliferation of wireless and mobile devices, video streaming, and shared resources on networked servers, while reaping benefits like cost savings, improved call routing and enhanced disaster recovery.

### The Solution

Cerium helped LWSD with the multi-site, multi-phase, multi-year deployment of a Microsoft Skype for Business communication and collaboration platform, employing a flexible deployment model. "Cerium helped us deploy a solution that was flexible and allowed us to slowly transition schools over a two-year period," said Matt Palmer, LWSD Digital Voice and Applications Manager. "Creating a very successful transition."

The deployment consisted of a three-server Skype for Business Enterprise Pool located at the District Resource Center as the PBX, AudioCodes Survivable Branch Appliances located in 44 schools across the district, and Polycom VVX phones in classrooms and offices. The schools rely on the enterprise pool for centralized Skype for Business services, while the survivable branch appliances provide connectivity for analog devices and enable the schools to dial out to 911 in the event of WAN outages that prevent centralized services from being reached. Cerium also deployed an enhanced 911 solution that enables emergency call center operators to immediately determine the school location a call is coming from and notifies the on-site school leadership that a 911 call has been placed.

Accommodating the Skype for Business deployment and the District's expanding network requirements meant upgrading their core and edge switches to achieve higher reliability and backbone speed across the entire network. Accordingly, Cerium designed and deployed a high capacity, enterprise-grade Layer 2 / Layer 3 network switch infrastructure, including industry-leading Cisco Nexus and Cisco Catalyst switches. Cerium also designed and implemented the District's data center core infrastructure to support increased capacity throughout the District. To round out the network, Cerium deployed Cisco Prime Infrastructure and Cisco Identity Services Engine to deliver management, control, automation and security.

### Multi-Phase - Multi-Year Rollout

The sheer size and scope of the project required a multi-phase, multi-year project plan for deploying the new infrastructure and migrating users to the new communication system. Cerium implemented the Skype for Business solution and migrated users from the old Nortel system without any disruptions in service, ensuring telecommunications were always available when students were present. The network infrastructure upgrade was performed evenings, weekends and during the summer. Because the network needed to be operating at 100% each school day, additional planning and care was required to ensure uptime after cuts were made.

Doug Drewry, Cerium Systems Engineer who worked on the Skype for Business rollout, talked about the challenges the team faced on this project, "The most significant challenge arose from the need to create consistent, repeatable results at each school deployment. Several iterations of process improvement within the deployment team and with the District Voice Team led to a reliable and reproducible deployment practice that pleased both school staff and District leaders."

### The Results

Skype for Business and Cisco infrastructure provided the ideal combination for a reliable, scalable and robust solution that would see LWSD through the next several years and support the District's increasing network demands. The network is faster, more reliable and more secure. 10G links implemented between schools enables the network to handle additional traffic. Moving from a flat network architecture to a segmented network architecture provides LWSD increased visibility into network traffic and makes it more difficult for attacks that breach the firewall to spread throughout the network. The new Cisco switches feature Power over Ethernet (PoE) supporting connectivity to IP phones, wireless access points and video cameras.

The new solution improved the District's ability to manage and maintain voice services at all the schools from the centralized District Resource Center. Before the migration to Skype for Business Server, the District required a nearly full-time resource for day-to-day Nortel support; which frequently required travel to numerous school sites. Now the District supports Skype for Business without the need for costly staff augmentation, relying on a managed service contract with Cerium for monitoring and assistance when needed.

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