

North Kansas City School Buses Add WiFi Powered by Cradlepoint Solutions

Cradlepoint Powers Solution to Recapture Lost Instructional Time

SUMMARY

The North Kansas City School District added WiFi to its activity buses so that students can access educational materials on the road, powered by the Cradlepoint COR Series with embedded 4G LTE.

CHALLENGE

It's one of the great tensions in the education world: the need for consistent time in the classroom versus the rich experiences that only occur when learning goes on the road: science field trips, hands-on vocational learning, debate competitions, band performances, etc. Some of students' most memorable, powerful lessons come from school activities that can't happen at school.



CHALLENGE:

REGAINING LOST INSTRUCTIONAL TIME WHILE STUDENTS ARE IN TRANSIT

PRODUCT:

CRADLEPOINT COR SERIES

APPLICATION:

4G LTE ROUTER PROVIDES WIFI FOR STUDENTS ON THE GO

MARKET:

TRANSPORTATION

Whenever students travel during classes, they are losing invaluable instructional time to the black hole of bus travel.

Recapturing lost instructional time had been a major conversation topic for North Kansas City Schools for a few years. As assistant director of transportation for the school district, Lon Waterman wondered how he could address the problem.

“I began to research how much time some of our students spend in buses during the school day,” explains Waterman.

Waterman came up with the idea of putting WiFi on buses so that students could access Internet resources for homework, research, online classes, the district’s Blackboard system, video tutorials, etc. while they’re on the bus. He approached Eric Sipes, Executive Director of Information Technology Services, with his idea. Waterman and Sipes researched how they could make WiFi work on buses, which led them to Cradlepoint.

SOLUTION

North Kansas City Schools implemented the Cradlepoint COR Series with integrated 4G LTE on four of the district’s activity buses used for longer trips. With its small footprint, hardened case, embedded modem, and external antennas for improved signal, the Cradlepoint COR is the ideal solution for buses. Cradlepoint COR receives a stronger signal than a USB modem would. Accessing 4G LTE, the Cradlepoint COR’s robust WiFi has not disappointed. Waterman and Sipes’ field tests showed that the router broadcast a clear signal 200 yards away from the bus – which proved important for uses with some classes – and that at least 22 students could stream video at once. Waterman and Sipes found that Cradlepoint



COR provided everything they had hoped. “Everything has gone as we expected,” said Waterman.

The Cradlepoint solution meshed perfectly with other technologies implemented in the school district. Every high school student receives a MacBook Air with security features and Internet filters already integrated into the laptop. Only those district-issued devices can connect to the WiFi on the buses, and everything on the network has to go through the district servers. Also, the buses are equipped with extra security features including video surveillance.

“We feel comfortable that kids are not going to be able to access anything they shouldn’t,” said Waterman.

APPLICATIONS

ACTIVITY TRIPS

The primary motivation for implementing this solution was to recoup lost instructional time because of the long hours that students spend on

bus rides for extracurricular activities like debate, band, and sports. Often, it's the high achieving students – the ones taking Advanced Placement and International Baccalaureate classes – who are also highly involved in extracurricular activities. Having WiFi to access Blackboard and keep up with their work allows them to use this otherwise dead time wisely, relieving an enormous burden on these hard-working students.

Waterman and Sipes hope that over time teachers will do more and more to utilize this technology to benefit the students. They envision scenarios in which a handful of students are all missing from a particular class because they're traveling for a debate trip. The teacher sends a live feed of the class via Skype (or similar technology) with a split-screen to show a clear view of instructions on a Smart Board. The traveling students can effectively attend the class from the bus, access the homework assignment through Blackboard, do their research online, and complete and turn in their work before they reach their destination.



SCIENCE FIELD TRIPS

The 200 yards of WiFi range proved particularly valuable for science classes.

CAREER & TECHNICAL LEARNING

Students in career and technical programs sometimes leave school for hands-on learning experiences – welding, for example. Before WiFi was implemented, they would spend 20-30 minutes on the bus and then another 20-30 minutes upon arrival doing preliminary activities before starting the actual activity. With WiFi on the bus, students have the potential to watch an instructional video, read through the day's lesson, take an online safety quiz, and complete any other preliminary activities en route, leaving precious time for the real, hands-on learning experience.

“WE HAVE SOME SCIENCE TEACHERS THAT TAKE KIDS TO A LOCAL CREEK TO DO WATER TESTING, BACTERIA TESTING, PH TESTING; THOSE TYPES OF THINGS,” EXPLAINED SIPES. “AND AS LONG AS THE BUS IS WITHIN 200 YARDS OF THE CREEK, THE KIDS CAN UTILIZE THEIR LAPTOP RIGHT ON THE SIDE OF THE CREEK TO COLLECT THEIR DATA, WRITE THEIR REPORTS, AND SUBMIT THEIR REPORTS ELECTRONICALLY TO THE TEACHERS BEFORE THEY EVER COME BACK TO THE CLASSROOM.”



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