



**Solution:** NetCloud Service for Mobile ■ **Industry:** K-12 Education ■ **Use Case:** Fleet

# Greenville County Schools Turn Bus Time into Learning Time

**Largest School District in South Carolina Adds WiFi to their 425 Bus Fleet with Cradlepoint Solutions & Exceptional Scalability**

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**Bill Brown,**  
GCS Executive Director of Education  
Technology Services

## Summary

With 75,000 students enrolled, Greenville County Schools (GCS) in South Carolina, wanted to implement a solution that would deliver safe and secure WiFi to its students while they ride on the school bus. The intent was to take advantage of the time the students spent traveling home and extend the classroom environment as if they never left their desks, turning school bus time into homework time.

GCS achieved this goal by deploying Cradlepoint NetCloud Service for mobile in their fleet of 425 buses. The service includes a WiFi access point, GPS and telematics integration, WiFi-as-WAN, and cloud configuration and troubleshooting, all delivered via an in-vehicle LTE router. With a maximum 77 students per bus, the Cradlepoint solutions are giving students up to 28,000 hours of additional instruction time. Additionally, the reliable WiFi connection on the buses have opened doors to other capabilities such as GPS and live streaming video for school bus tracking and monitoring.

## Company Profile

GCS encompasses 87 schools, spans across 800 square district miles, and is the largest school district in South Carolina, with student enrollment only expected to grow.

Initially, GCS began a pilot program for safe and secure WiFi on a few buses to determine the feasibility of the technology and study the LTE coverage within Greenville County. Then, a GCS high school junior council member spoke in front of the board during a public session on how the WiFi initiative could increase academic achievement and lower behavioral problems that arise on buses. Unfortunately, at the time there was no funding source identified for the initiative.

Bill Brown, Executive Director of Education Technology Services at GCS, decided to assist with the efforts to bring the initiative to life. He wrote a proposal specifically to put WiFi in the buses and submitted it for the Mobile Device Access Management (MODAM) Grant offered by the State. The State approved the proposal and the \$1.2 million initiative was fully funded.

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## Business Needs

GCS has already delivered 19,000 Chromebooks to their students for school use, and there will be an additional 38,000 Chromebooks delivered over the next two years, putting one in the hands of each student in grades three through 12. GCS needed a robust and reliable network solution to provide WiFi on the buses so the students can access their school documents with their Chromebook or personal device on the bus.

GCS also planned to use critical applications such as GPS for bus monitoring and mapping and therefore required a constant connection to oversee the buses in real time.

Finally, they needed a connection that could be up and running quickly. Each student who travels on the bus spends about 45 minutes en route. GCS needed to take that valuable time and put it toward homework or studying.

## Solution

The Cradlepoint's NetCloud Service for mobile was deployed in all 425 buses, providing a reliable WiFi connection to the students with no wait time, while also connecting GPS and live streaming video of the buses. The service also includes routing, WAN link termination and traffic management, and a firewall, all delivered via a purpose-built primary router with embedded LTE, 24x7 support, and a limited lifetime warranty. The entire bus fleet is also managed by Cradlepoint's NetCloud platform via a managed service provider. VPN tunnels are used to secure all networking traffic to and from the student's computer or personal electronic device.

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“Once WiFi is on the bus, it opens up a plethora of other capabilities and a whole new opportunity,” said Brown.

## Benefits

### Reliable Connectivity

With Cradlepoint, WiFi is running within five minutes of starting the bus, and the students don't have to wait and lose out on valuable time they can spend productively.

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“The WiFi on the buses creates an extension of the classroom. The students know exactly how to log on and can seamlessly continue their school work once on the bus,” said Brown.

Staying busy with schoolwork on the bus also keeps the students from misbehaving. This is an added bonus for school bus safety for the district.

### GPS Monitoring

The Cradlepoint is used to collect GPS data, which is then transmitted back to the offices with a mapping application.

“At any given time we can watch our buses to see where they are,” said Brown. “With the data from the Cradlepoint, the GPS is spot on.”

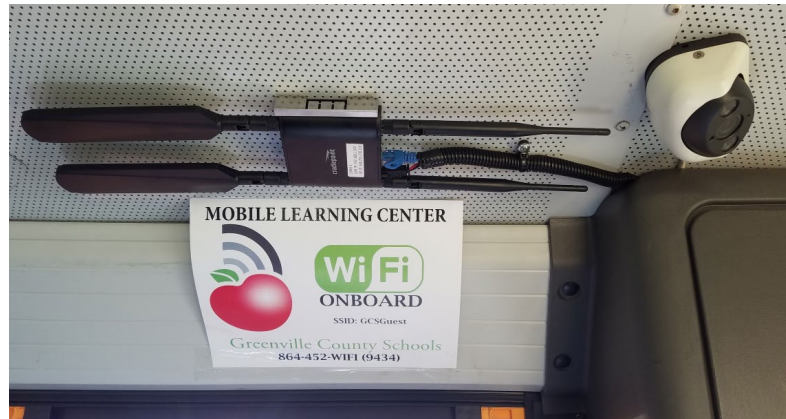
They also have the ability to geofence the buses, so alerts are sent back if a school bus leaves the county.

Additionally, live streaming video of the buses has greatly minimized the amount of costly truck rolls since deploying the Cradlepoint. In the past if something went wrong with a bus, a supervisor or police officer may need to be dispatched, depending on the urgency. With the Cradlepoint solution, they can see what the problem is and determine who to send out, or if anyone needs to be sent at all, via the cloud management capabilities.

### Dependability & Time Savings

After deploying Cradlepoint, GCS has had little to no monitoring, troubleshooting, or upkeep of the device.

“We really have not had to touch them once they were set up. That’s the great thing about it. We really like the plug-and-play aspect – you just turn them on and you’re done,” stated Brown. “With only 62 people to support 58,000 devices, the less equipment we have to troubleshoot, the better.”



**The GPS and live streaming components are really helpful for our state transportation department.”**

**Bill Brown,**  
GCS Executive Director of Education Technology Services

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