



Solution: NetCloud Service for Branch ■ **Industry:** Education ■ **Use Case:** Failover

Cradlepoint Provides Robust Connectivity so Duval County Public Schools' Students Keep Up with the Pace of Technology

The Modern Learning Environment Requires a Constant Network Connection



If we lose our connection to the main link at a school, the Cradlepoint automatically takes over without any intervention. We can 100 percent rely on Cradlepoint for a WAN link – and that's a big relief."

Stephen McLaughlin, Supervisor of Network Operations at DCPS

Challenge — Duval County Public Schools (DCPS), the 20th largest school district in the nation serving the urban, suburban, and rural areas of Duval County, Florida, had a backup network system that was more than a decade old, and the effects of the aged system were beginning to make a noticeable impression on the school's teaching and state testing processes.

Solution — DCPS deployed Cradlepoint's NetCloud Service for Branch to ensure they could achieve reliable connectivity for its nearly 170 sites throughout the county. The service includes extensive cloud functionality, a purpose-built CR4250 router, 24x7 support, and a limited lifetime warranty.

Benefits — With the high network performance of Cradlepoint's wired line failover solution, DCPS can automatically send traffic through the wired link the moment the main wired connection fails — keeping the students' education and school processes going at the required pace.

Challenges

The near 170 sites at DCPS includes a sprawling 102 elementary schools, 24 middle schools, one K-6 school, two K-8 schools, two 6-12 schools, 19 high schools, and a number of district administration sites. DCPS had been using a backup connection from its local provider; however, because the equipment hadn't been updated in over a decade it was regularly failing.

The unreliable backup connection also became a problem when DCPS decided to move from its analog phone to VoIP systems. It became apparent that the old networking equipment couldn't handle the amount of traffic passing through for the primary wired line or the secondary wired line.

Long Delay in the Failover Process — In today's online-based curriculum environment, the need for constant network access for schools is critical and network downtime means time lost is learning lost. The time it took to get everyone back online was extensive and becoming too common to keep up with today's pace of learning and education requirements for testing.

Unreliable Connectivity for State Testing — With the backup connection regularly failing, DCPS was continually asking for extensions of time for state testing. Schools are only allowed a window of time to complete the tests, which means if that time is lost, so are the state testing benefits for the school and its students.

Risk of Dropped Connectivity for Hospital Home-bound Students — DCPS needed to ensure that students who complete their education at home can access the school network quickly and easily.

Lack of Simple Configuration & Management for the Large Network — DCPS needed to deploy the Cradlepoint solution in nearly 170 sites and not only needed the process to be quick and easy, but it required a streamlined way of managing the large deployment.

Solution

DCSP chose Cradlepoint's NetCloud Service for Branch, deploying the CR4250 branch performance router for mid-sized locations with higher performance needs in each one

of its schools. This allowed the district to move forward with deploying the VoIP phone system and update its network for pervasive connectivity throughout the district. The service also includes cloud management, 24x7 support, and a limited lifetime warranty.

DCPS is now set to have fulltime connectivity for its district and feels secure that if it should lose its main connection, Cradlepoint will safely failover, seamlessly.



The seamless pass of connectivity to the Cradlepoint is huge to me because of the large size of our district. With the 170 sites, including the admin sites, and only six techs to service the network, we are extremely busy. Cradlepoint has taken a huge workload off our hands and I have a solution I can trust.”

Stephen McLaughlin,
Supervisor of Network Operations at DCPS

Benefits

Keeping Up with the Pace of Technology

Modern education practices have progressed to online testing, digital textbooks, flipped classrooms (delivering instructional content online), and cloud-based tools designed to enhance teaching methods — like interactive whiteboards.

“We've moved to a point where the schools are 100 percent reliant on a network connection to educate the students,” explained McLaughlin.

Currently, every student has access to a laptop or iPad through the school depending on the courses they are taking. This makes the student reliant on computers and the network as well. Further, DCPS has moved toward including many technology-based courses, such as gaming, programming, and security labs, that depend on Internet connectivity.

“Deploying Cradlepoint solutions has helped our district become part of an overall effort to deliver a web-based teaching method to its schools. We have addressed the demands for greater bandwidth, higher reliability, and easier management through this solution,” said McLaughlin.

Constant Connectivity for School Testing

DCPS also depends on a constant network connection for its computer-based state testing.

With most of the testing computer-based, downtime can cause serious issues for the school and the students. In Duval County, the state allots specific testing time windows for the different grades and subjects. If that time window is missed the school must apply to the state to have that testing window extended.

Two years ago, DCPS’s previous network system kept failing, causing it to request so many extensions for testing time that the state began declining the requests. Schools use state testing to follow student’s progress; identify strengths, weaknesses, or gaps in curriculum and instruction; align the curriculum with the statewide standards; and identify students who may need additional help.

“If you have a whole grade level that misses a testing window, and we’re out of extensions, then we can’t record progress or see where we need to improve – and ultimately we miss out on a chance to help our students be successful,” said McLaughlin.



Reliable VPN for Remote Students

DCPS’s teachers go to visit nearly 200 hospital homebound students who need to complete their schooling remotely from home. Each student is given an air card that provides a VPN connection back into DCPS’s main network so the students can work on their computers and securely access online content and files just as if they were at school.

With more students having to go to school remotely, it needed more capacity for the VPN connection.

“The Cradlepoint was the perfect solution to allow remote students to stay online with the same web-based curriculum access as the rest of the students,” said McLaughlin.

Cloud Management Software for Streamlined Control

All of the routers were easily and quickly configured before they were even deployed via Cradlepoint’s cloud management platform, NetCloud Manager. The software also allows the IT team to deploy firmware upgrades and troubleshoot any of the routers without ever leaving the office.



The cloud-based software was very easy to learn and navigate. It makes managing our large deployment of routers simple – and that is a plus.”

Stephen McLaughlin,
Supervisor of Network Operations at DCPS

A Time Saver & Stress Reliever

The Cradlepoint solution has saved the DCPS IT team time and effort because the network has significantly fewer issues to troubleshoot, and the NetCloud Manager software allows them to manage all the devices from a single location.

“We have fewer problems with the network now, so we get all that time back that we spent troubleshooting. This has really worked well for us,” said McLaughlin.

McLaughlin estimates that with the NetCloud Manager software, the IT team saves at least 20 minutes that it might have otherwise needed to troubleshoot the network if the connection went down — some days more. Over a period of time that can add up, creating non-productive students and overworked staff.

The Cradlepoint solution has also removed the heavy stress load of fearing that the network will go down during school and testing times.

“I don’t worry anymore that the network will go down during testing times,” said McLaughlin. “I have the peace of mind that I have a solution that I can trust, and I know that if I lose my primary connection the Cradlepoint will keep our schools online.”

Duval School Police Department

The DCPS Police ensures a safe and secure environment on school grounds. The police cruisers also use air cards to access the main network, which supports about 80 or so officers. The Cradlepoint solution increases the safety of the schools by ensuring that the police remain online and communication stays constant.

“When you find a product that works, you stick with it,” said McLaughlin. “It does everything we needed it to do and more.”

Future Planning

“As time passes, I’m sure we will find more uses for our existing Cradlepoint inventory,” said McLaughlin.

Additionally, with the need for more security and safety within schools at the forefront, DCPS is interested in the benefits of incorporating Cradlepoint’s NetCloud Service for mobile as well, such as in bus fleets or for other mobile assets like video to see attendance on the bus and capture any incidents.

“Cradlepoint has already proven themselves with their branch services, so the decision on what products to include as funding becomes available is easy and stress-free,” said McLaughlin.