St. Vrain Valley School District Transforms Learning with More Connected Campuses

Cisco DNA Service for Bonjour® helps connect thousands of students and devices for blended learning.
A Commitment to Innovative Learning

For the St. Vrain Valley School District, technology is about much more than helping students and faculty access more information. It’s about transforming the student experience, and reimagining the possibilities of PK-12 education.

Located 30 miles north of Denver, the District serves approximately 32,000 students across 55 schools and numerous programs. St. Vrain has embraced technology for many years, and has built an Innovation Center that encourages a variety of imaginative projects, from virtual reality to drones, app development, and robotics.

Wireless devices are everywhere at St. Vrain schools. They play an important role helping students personalize their learning to their own pace and direction.

“We have 40,000 devices on our wireless network,” says Joe McBreen, Chief Technology Officer at St. Vrain Valley Schools. “They include iPads, Chromebooks, Androids, PCs, Unix boxes—you name it.”

While all these devices can spark new possibilities in education, it’s also important that technology does not get in the way of learning. One of the biggest challenges the District faced was making sure its network was ready for any student to connect via any device and be ready to learn.

For example, when instructors first started using the AirServer app and Apple TV for classroom collaboration, it would often drop students’ connection. If students wanted to join the network, they might see a list of several hundreds of devices on the school network. Wireless collaboration in the classroom could be difficult, even in an environment with only 30 students.

“The network wouldn’t play nicely with what the teachers and students wanted to do,” says McBreen. “The reality in IT today is that when students or teachers walk into their school, they expect experiences from their IT systems like they have at home.”

The existing network made it difficult for teachers and students to effectively use iPads to collaborate online and at scale through the Bonjour® protocol.

“The Bonjour® protocol appears simple and stable when used in a home or small office, but it was not intended to operate in an enterprise environment like ours with literally thousands of teachers and tens of thousands of student devices,” says McBreen.

St. Vrain needed a solution to help its students and faculty connect and work together quickly and easily via any wireless device—without compromising performance and security.

Delivering End-to-End Bonjour® Solution for a Large Education Environment

To enable the secure, intuitive wireless experience its students needed, St. Vrain deployed the Cisco DNA Service for Bonjour® solution across the entire district. Cisco DNA Service for Bonjour® solution provides policy-based services discovery and distribution across the LAN/WLAN network. Its distributed architecture makes it easy for the District to support enterprise-level collaboration, content sharing, and Internet of Things (IoT) devices.
Working closely with Cisco’s products and services teams, McBreen and his team set up the Cisco DNA Service for Bonjour® solution across all the locations of the St. Vrain School district. It resides on Cisco Catalyst switches and Cisco DNA Center controllers at the services boundary of LAN and WLAN networks. The Cisco solution lets St. Vrain take advantage of policy-based services discovery and distribution at enterprise-class scale. It integrated smoothly into the District’s existing network environment, without requiring forklift upgrades or network redesigns.

The Cisco DNA Service for Bonjour® solution enables more location-specific connectivity, with Bonjour® services discovery that lets teachers and students to communicate closely within each school, instead of network-wide, providing great performance and a smooth experience for students.

The solution also makes it easier for the District to extend connectivity to thousands of students more easily. Its scalable architecture allowed end-to-end service integration without compromising system or network performance.

Collaboration is easier too, and St. Vrain is exploring new ways to enable Bonjour® services across LAN and WLAN networks. It’s providing wireless access to new services like mobile printing, continued support for file sharing among students and teachers, digital signage, IoT devices, and much more. St. Vrain delivers these new services while maintaining full IT control and management—and minimal network disruption.

To ease network administration, the Cisco Wireless LAN Controller plays a key role in providing location-specific mDNS traffic-management to support roaming. The intuitive Cisco DNA Center user interface provides a complete network view of Bonjour® service management, policy-based service distribution across LAN and WLAN networks, and a 360-degree view of Bonjour® services across the network.

Empowering Students with a Connected Environment

With Cisco DNA Service for Bonjour®, now teachers can share content and apps with their students in an efficient, and dependable manner.

“With the iPad program now we are able to do station rotations with students frequently taking control, which is a huge part of blended learning,” says McBreen. “Students at one station are able to watch a video, while at the next station they are able to use AirPlay to collaborate and work together. With Cisco DNA Services for Bonjour®, what we see are students that are able to share more—more often and in more unique ways.”

The solution is intuitive, fast, and dependable, so it makes technology easier to use. Today, instead of seeing every single device in the school, students that connect to wireless environments only see the devices that are close to them.

“A teacher last week described the service as rock solid,” says McBreen. “That is a stark contrast from before we installed the service. It really is a game changer.”

The Cisco solution’s APIs help administrators save time, too. For example, if an iPad was misplaced, students would inform a school staff member such as McBreen and he would use Cisco DNA Center to locate the device. He could then instruct a student to open the Bonjour® client on the device and enable its visibility to network administrators, allowing them to locate the device and begin the process of recovering it.
as their teacher, Librarian, or office staff, setting off a chain reaction of adult actions in the building and beyond.

“Now, leveraging the Cisco WiFi APIs, students just log on to a secure web page with their credentials where their iPad’s last known location is presented to them, resulting in a dramatic reduction of adult staff time and engendering a self-help posture in our students,” says McBreen.

The comprehensive Cisco wireless solution enables the District to meet its commitment to helping every student drive their own learning where they want to go.

“Things could not be better,” says McBreen. “Faith and confidence in a reliable network experience has been restored when teachers were able to leverage Bonjour® protocol-based services.”

Continuous, Growing Innovation

St. Vrain is excited about extending its technology even more, and plans to make major upgrades to its facilities in the near future. Its Innovation Center, which hosts students from schools across the district, will expand to 50,000 square feet, adding a biomedical engineering lab and an aeronautics facility where students can create and test new remotely operated vehicles.

With the Cisco solution in place, District administrators are confident that they can continue to scale their technology to take on a multitude of new learning initiatives in the years ahead.

“When the youngest, brightest most inquisitive minds are paired with experienced and passionate educators, and partners that are equally dedicated to their futures like Cisco, together we can make an amazing future.”

Joe McBreen
Chief Technology Officer, St. Vrain Valley Schools

For more information

To learn more about Cisco DNA Service for Bonjour® visit: cisco.com/go/dna/bonjour

Products and Solutions

Cisco DNA Automation and Assurance
- Cisco DNA Center controller

Switching
- Cisco Catalyst 3850 Series Switches
- Cisco Catalyst 4500 Series Switches
- Cisco Nexus 7706

Wireless
- Cisco Wireless LAN Controller
- Cisco Aironet Series Access Points

© 2018 Cisco and/or its affiliates. All rights reserved. Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: www.cisco.com/go/trademarks. Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)