ST. MARY'S COUNTY PUBLIC SCHOOLS KEEP STUDENTS ON THE FOREFRONT OF SCIENCE AND TECHNOLOGY WITH DIGITAL LEARNING SECURED BY UNIFIED ACCESS CONTROL

Industry: Education

Challenges:

- Ensure strong access control for wireless communications necessary for digital learning used to support advanced science, technology and mathematics curriculum

- Protect schools' networks against compromised laptops and wireless attacks

- Support rollout of digital classrooms while minimizing administrative burden on IT staff

Selection Criteria: Security was a prerequisite for a rollout of a scientific, technology and mathematics education grant at St. Mary's County Public Schools. The school district deployed Juniper Networks Unified Access Control (UAC) based on its solution provider's recommendation.

Network Solution:

Juniper Networks IC4000 Controller and UAC agent

Results:

- Deployed access control for wireless network at two schools in this Maryland school district

- Allowed students to access and use the wireless network while maintaining strong network security

- Minimized effort to deploy and maintain network access control by leveraging its existing investment in network equipment

Preparing our children for the 21st Century means giving them the advanced science, technology, engineering and math skills they need to remain competitive in a global economy, and that's a priority for St. Mary's County Public Schools in Maryland. A rigorous program of study emphasizing the core areas of math and science with an infusion of technology and engineering is offered at two public schools, with plans for expansion to all elementary schools, middle schools and high schools by 2010.

The Science, Technology, Engineering and Math (STEM) academy is a rigorous program designed to give students extensive laboratory experiences using the latest scientific and problem-solving techniques and to give students exposure to a broad range of technical applications. This curriculum, most naturally, calls for a one-to-one computing program to give these high-achieving students the tools they need to better prepare for the future.

Challenge

St. Mary's County Schools received a grant to purchase 60 laptops to support the STEM program. The laptops are mounted on carts and are wireless, so they can be moved easily from classroom to classroom. The school district was particularly concerned about the risks associated with wireless communications, so it set out to find a solution.

"We were very concerned about wireless security," says William Caplins, director of technology at St. Mary's County Public Schools. "We needed to protect the privacy of our communications and to protect our network from wireless attacks." Data Networks stepped in to provide guidance.

Selection Criteria

Basic wireless security isn't sufficient protection when it comes to protecting against unauthorized network access. "With basic wireless encryption, an attacker can break the encryption easily. Stronger authentication and access control methods are necessary to ensure the security on a wireless network," says Dwayne MacKenzie, Security Practice Manager at Data Networks, a solution provider specializing in the public sector.

"After learning about network access control (NAC), we knew we needed it if we were going to have wireless LANs (WLANs) in our schools." says Caplins.

Data Networks recommended Unified Access Control based on its long-standing positive experience with the solution. "We conducted a rigorous comparison of access control solutions on the market, and there's nothing else that compares to UAC for the feature set and the capabilities," says MacKenzie.

Solution

The school district deployed UAC to provide access control for students participating in the STEM academies at Spring Ridge Middle School and Great Mills High School. "With UAC, we can allow a wireless network and have the same level of control that we have on our wired network," says Caplins.

St. Mary's deployed the IC4000, and downloaded the UAC agent to the laptops. The UAC combines user identity, device security state and location information for session-specific access policy by user enforced through the network. UAC enforces security policy at Layer 2 using any vendor's 802.1X-enabled switches or wireless access points, or at Layers 3-7 using any Juniper firewall platform. St. Mary's uses 802.1X-enabled wireless access points and switches for policy enforcement, and authentication is managed through a RADIUS server back to their Microsoft Active Directory server.

The UAC agent is dynamically downloaded to the laptops. The UAC agent provides Host Checker, which scans endpoints and performs an assessment on the security state for a variety of anti-malware and security applications, while also automatically monitoring antivirus signature files. This ensures that only computers that meet St. Mary's security policies are permitted access to the network. Plus, computers compromised with malware won't be able to access the network and spread malware or attacks. The UAC agent integrates features from Juniper Networks Odyssey Access Client. St. Mary's uses Host Checker's predefined policies to simplify administration, although IT is able to customize the endpoint host checks if desired or needed.

> **"With UAC, we can allow our wireless network to support our digital learning curriculum and have the same level of control that we have on our wired network."**
>
> **William Caplins,**
> **Director of Technology, St. Mary's County Public School**

Results

With UAC, St. Mary's was able to roll out a wireless one-to-one computing program to support its cutting-edge science, technology, engineering and math curriculum with confidence that data privacy and network security would be maintained. "Juniper's UAC was the pivotal factor in enabling the digital learning curriculum in our district," says Caplins.

St. Mary's took a phased approach to deploying network access control, which ensured a smooth deployment and enabled it to leverage its existing IT infrastructure without modification, including wireless access points and switches. "It was a straightforward deployment of a new technology," says MacKenzie. "We kept the scope focused and took a flexible, phased approach to deployment, making it easy to build on our success."

St. Mary's plans to expand its use of the UAC to provide administrative and guest access at the STEM academies, as well as using UAC at more schools in the district.

Next Steps and Lessons Learned

"All children can and will learn" is the core value at St. Mary's County Public Schools. Enabling students to develop their intellectual and personal potential for a lifetime requires the right tools, and in today's world, information technology is one of the most critical tools. Integrating existing and emerging technologies into the fabric of instruction gives the children of St. Mary's County the tools they need to succeed in the global workforce.

About Juniper Networks

Juniper Networks, Inc. is the leader in high-performance networking. Juniper offers a high-performance network infrastructure that creates a responsive and trusted environment for accelerating the deployment of services and applications over a single network. This fuels high-performance businesses. Additional information can be found at **www.juniper.net**.

About Data Networks

Data Networks provides effective technology-based solutions to meet the specific needs of K-12 school districts, higher education institutions, and state and local government agencies. Data Networks is a Juniper Networks Elite Partner with a Juniper Specialty in Advanced Security. We combine our 25 years of experience along with Juniper technologies to deliver solutions designed to keep pace with the evolving IT security needs of public sector organizations. Our solutions are specifically developed to drive productivity and manage change. Learn more at **www.datanetworks.com**.

To purchase Juniper Networks solutions, please contact your Juniper Networks representative at **1-866-298-6428** or authorized reseller.

3520264-001-EN Feb 2009

Printed on recycled paper.