datanetworks

PROVIDING STATE-OF-THE-ART WIRELESS LAN UPGRADES to a
Densely Populated College Campus

What Data Networks Did for St. Mary's College of Maryland

- Utilized predictive analysis tools and onsite observation to plan optimum campus-wide wireless network connectivity and speed.

- Implemented state-of-the-art wireless network infrastructure for 20 campus buildings and outdoor spaces, dramatically improving performance and monitoring capabilities.

Abstract

New wireless networking infrastructure helps improve network performance and monitoring capabilities across a densely populated college campus.

The challenge

St. Mary's College of Maryland (SMCM) is a liberal arts college located 70 miles southeast of Washington, DC. Boasting several honors undergraduate and master's degree programs, SMCM's total student enrollment is approximately 1,900. The college maintains a 10-to-1 student-tofaculty ratio, and almost 90% of its students live on campus.

To support learning and other activities, St. Mary's College of Maryland offered wireless network access on campus. However, the network's performance was sporadic. The problem was density related. While SMCM had sufficient signal coverage, if too many people simultaneously tried connecting to the network through a single wireless access point (WAP) the network slowed to a crawl. SMCM had previously installed a few 802.11b APs in the library as a wireless network strictly for that building. From there they continued to add autonomous wireless access to other buildings, with no long-term vision.

The solution

Previously, Data Networks conducted a wireless "site survey" of the entire SMCM campus. They intended to determine wireless network propagation through building materials to truly understand required deployment density. Data Networks technicians used Aruba Networks software to simulate floorplans of every campus building, and the software's predictive analysis determined every room's optimum WAP placement for best possible wireless coverage. Using these predictive results, Data Networks then performed an onsite evaluation of every room in every building, moving around each WAP-equipped location with a laptop to test wireless performance at specific spots.

This fine-tuned the software model. In the end, additional WAPs were needed in unforeseen locations, and other WAPs which were either planned or in-place needed repositioning to better locations.

Next the technicians designed a consolidated, controller-managed wireless network architecture for 20 campus buildings plus a few outdoor areas. The required equipment included 500 Aruba Networks 802.11ac WAPs, one Wireless Access Controller, and 150 Juniper Networks Ethernet switches. The design also specified user access by group (i.e. students, staff, and guests) and incorporated an "Eduroam" authentication rule that allows sharing of access across participating institutions. Tasks included:

- Configured the new Ethernet switches at Data Networks' Staging and Configuration Center.
- Set up Admin access to the Controller and installed the recommended, current operating system.
- Activated/tested wireless network connectivity with minimal downtime.
- Configured the Wireless LAN Controller and tested it using specified requirements and design.
- Delivered knowledge transfer to SMCM IT staff including a review of all configurations.

The result

Upon project completion, all rooms in all SMCM buildings had not only robust wireless network coverage, but also could support any realistic user density. The results have been positive and noticeable. "Now, since we're a controller-based campus wireless network, we have consolidated metrics. Before, we had no idea how many clients connected to our entire network at any given time. The biggest event we've had since project completion was in the gymnasium. There were 500 simultaneous connections to our WAPs there, and performance was great," says Bob Brown, SMCM IT's Director of Network Support Services. SMCM IT also has much anecdotal evidence to support this: colleagues frequently approach them and mention the higher-quality wireless performance.

According to Chris Burch, SMCM's Assistant Vice President of Information Technology, "We're very satisfied with Data Networks' capabilities and performance in helping us achieve our wireless network objectives. Even better, our relationship isn't so much vendor-client as it is partnership, a team working towards a common goal."

About Data Networks

Data Networks provides effective technology-based solutions to meet your unique needs. Our solutions are specifically developed to help you drive productivity and manage change.

INNOVATIVE TECHNOLOGY

By partnering at the highest levels with the industry's most respected manufacturers, Data Networks can deliver the right products for your environment with the most aggressive pricing possible. Our strong vendor relationships also bring technical training opportunities, expedited help desk resources, and professional service liaisons for consulting and project engagements.

INSPIRED ENGINEERING

Our goal is to be your trusted technology advisor. So we staff highly-qualified engineers who bring years of experience and the most advanced technical certifications to every engagement. We assign them a single area of technical focus, a unique approach that allows them to continually update their skills and expand their specialized technical knowledge. And we arm them with documented best practices developed over more than 30 years of public-sector service.

We invite you to learn more at datanetworks.com or by calling 800-283-6387.